Capital Structure Choice of the Foreign Affiliates of Japanese Multinational Firms: Characteristics and Problems

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ABSTRACT

   In this paper, we compare and analyze capital structure strategies of foreign affiliates among Japanese and U.S. multinational firms in terms of efficiency of the internal capital markets. A hypothesis is that foreign affiliates of multinational firms rely more on external borrowing in well developed capital markets, and on internal borrowing otherwise. Despite the limitation with respect to the data, our research revealed that Japanese multinationals allocate the fund efficiently by utilizing internal capital markets to the same extent as U.S. counterpart do. However, they heavily rely on financing from their parent companies and Japanese banks, and diversification of the source of fund seems to be insufficient.

1. Introduction

The purpose of this paper is to review the characteristics and strategy of capital structure choice of the Asian affiliates of Japanese multinational companies, in comparison with those of Western counterparts, to analyze the comparison results, and to find problems. Theoretical analyses of capital structure choice among multinationals or their foreign affiliates have so far been made mainly in the context of taxation system, based on an assumption that the capital markets (neglecting taxes) were perfect. Examples of this kind include Feldstein, Hines, and Hubbard, (1995), Grubert (2002), Choedhry and Nanda (1995), Grubert (1998), Singh and Hodder (2000), and Grubert (1998). However, capital markets in Asia are far from perfect. Therefore, it is insufficient for us to discuss the issue only from the viewpoint of taxation.

Capital structure choice of foreign affiliates is particularly important for multinationals because the capital markets differ among countries with respect to the degree of development. A multinational firm should maximize its consolidated firm value under such difference. In particular, it should raise necessary capital in a country where capital cost is low, and optimally allocate the fund to the firms that provide it with the highest value. To do so, the multinationals should centralize their financing decisions, with creating and maintaining well-functioning internal capital markets[1]. Tax system should also be evaluated from this viewpoint, as in Desai (2004). We basically follow the approach.

We compared and analyze capital structure strategies of foreign affiliates among Japanese and U.S. multinational firms focusing on efficiency of the internal capital markets. In this paper, we use the term of internal capital market such as include not only internal capital financing but also borrowing from the parents. A hypothesis was that foreign affiliates of multinational firms relied more on external borrowing in well developed capital markets, and on internal borrowing otherwise. We expected that the hypothesis was true for both Japanese and U.S. firms. In the context of Banga (2002), the hypothesis would be understood as "Both Japanese and U.S. firms structure their finances in response to the respective capital market conditions, and adopt a common financing strategy in countries where both have affiliates."

We compared only Japanese and U.S. multinational firms, and our analysis was based on limited financial data for foreign affiliates. Despite the limitation, our research revealed that Japanese multinationals allocated the fund efficiently by utilizing internal capital markets to the same extent as U.S. counterpart did. However, they heavily relied on financing from their parent companies and Japanese banks, and diversification of the source of fund seemed to be insufficient. In this respect, the corporate finance of foreign affiliates of Japanese multinationals was similar to that in Japan[2]. As a result, foreign affiliates of Japanese multinationals were exposed to higher risk of

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[1] Of course, we should be cautious about centralized decision making style because we have seen many examples of planned economies in which asymmetric information imposed high agency costs.

[2] See Banga (2002). The paper saw whether the foreign subsidiaries differed according to their country-of-origin in adapting their corporate financial structures to the host countries' financial environment. The corporate financial structures of the listed Japanese and the U.S. subsidiaries were compared to that of the Indian firms in Indian manufacturing for the period 1997-98. The study also compared the financial performance of the Japanese and the U.S. firms to that of the Indian firms controlling for size and industry specific effects.

The study suggested that the country-of-origin of foreign subsidiaries affected the corporate structures and financing patterns of the foreign firms. The extent to which the foreign subsidiaries were able to adapt themselves to the host countries financial environment would differ according to their country-of-origin. The U.S. subsidiaries in India did rot differ much from the Indian firms with respect to their corporate financial structure and financial performance while the Japanese subsidiaries in India, more or less, followed their parent companies' corporate structures and financing patterns.

the shortage of fund when the Japanese banks could not provide enough credit capacity, a situation which occurred in 1999. Thus there seems to be a room for improvement.

The structure of this study is as follows. In the Section 2 we present the basic model. In the Section 3 we develop financing strategies according to capital costs and tax rates. In the Section 4 we present our hypothesis and empirical results. In the Section 5 we analyze the efficiency of internal capital markets in terms of investment functions. In the Section 6 we analyze efficiency of cash management strategies. In the Section 7 we conclude the discussion.

2. Basic Model

First we confirm the economic meaning of foreign affiliates of multinational firms. Suppose that a firm has two consecutive production processes. The firm can either (i) do both processes in Japan, or (ii) relocating one of them overseas; and the latter alternative can be done by several measures including outsourcing by contracts, forming joint ventures, and setting up wholly owned subsidiaries. Our focus is put on the last case.

Following Antras (2005), and Navaretti and Venables (2004), we model the revenue function of a firm as

$$R(K,k) = B^{1-\alpha}C^{\alpha}\left(\frac{K}{\eta}\right)^{\alpha\eta}\left(\frac{k}{1-\eta}\right)^{\alpha(1-\eta)},$$

(1)

where K is the capital stock of the parent company, k is the capital stock of a foreign affiliate, and others are positive parameters. Based on this, the parent company maximizes the consolidated profit

$$\pi = B^{1-\alpha}C^{\alpha}\left(\frac{K}{\eta}\right)^{\alpha\eta}\left(\frac{k}{1-\eta}\right)^{\alpha(1-\eta)} - r_{H}K - r_{L}\theta k,$$

(2)

where r_{H} is the cost of capital in the home country, and r_{L} is that in the host country.

The firm allocates capital stock k to the Asian affiliate to let it do a part of its production process, a decision which should have economic reasoning. In the local capital market, the firm's cost of capital, r_{L}, is expected to be higher than that in Japan, r_{H}, because in the former the capital market is less developed; namely, $r_{H} < r_{L}$. At the same time, the firm's productivity of capital is expected to be higher in the local market than that in Japan due to lower wages there. Let θk be the productivity of capital, and we assume $\theta < 1$. That is, the firm earns the same amount of profit with less capital stock in the host country. We assume that $\hat{r}_{L} \equiv \theta r_{L}$, in other words, we interpret $\hat{r}_{L} < r_{L}$ as the effective cost of capital. We have no prior knowledge on whether the effective capital cost in the host country is higher or lower compared to r_{H}. However, since $\hat{r}_{H} \equiv \theta r_{H} < r_{H}$, capital cost advantage of the foreign affiliate is assured as long as the firm raises the capital in Japan. The firm exploits the benefit from lower θ when it places both of the two production processes in Japan. This is a major reason for Japanese firms to have foreign affiliates.

When the multinational firm outsources, instead of establishing subsidiaries, we know that there emerges a so-called "hold-up" problem, especially when the capital is firm-specific; in this case it is likely that both firms would invest less, which reduces the consolidated profits accordingly. Joint ventures also have the same kind of problem. Therefore, it is rational for the multinational firm to have a wholly owned subsidiary to maximize the

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consolidated profit as in the Equation (2).

3. Capital Structure Choices

Multinational firms have several alternatives to finance their foreign affiliates; to raise the equity capital or to borrow; to raise the money in Japan or in the local market; and which currency is going to be used. In reality, however, it is often difficult for foreign affiliates to raise the equity capital in the local market, thus they would rely on borrowing there. In addition, many subsidiaries rely their financing on their parent companies. Therefore, we focus on the following three financing alternatives: (i) internal capital financing, $(k - B - b)$; (ii) borrowing from the parent, B; and (iii) borrowing from the local banks, b. As we defined, $(k-B-b)+B=(k-b)$ is financed by internal capital market.

(i) Internal Capital Markets

Few firms are free from capital constraints. Most firms need to allocate the limited fund to the necessary purpose efficiently as a whole. For example, a Japanese multinational firm, which finds that its foreign affiliates encounter the difficulty in financing in the local market, would allocate the necessary money to the affiliates by using its own borrowing capacity or internal cash holding. Such a mechanism, often called the internal capital market, is particularly important in the operation of multinational firms. Desai (2004) focused on internal borrowing from the parent company and external borrowing from local banks, and examined empirically whether or not the financing decisions of U.S. multinational firms were efficiently structured through their internal capital markets.

Efficient allocation of capital should follow two steps as follows. First, the multinational firm seeks for financing of the foreign affiliate in the home country. Since we assume $r_H < r_L$, cost of capital is lower in the home country compared to that in the host country for both cases of vertical FDI and bank borrowing. Borrowing from the parent company is more important when the local capital market is less developed.

And second, the multinational firm should decide which subsidiaries in different countries obtain the capital. Suppose the firm has two subsidiaries in country A and B. Both subsidiaries need money for capital investment projects. And the local cost of capital is higher in the country B relative to that in the country A; in other words, $r_B > r_A$. If the affiliate must rely at least partially on external sources of capital, the firm would naturally choose to borrow less in the country B. Thus, it is appropriate to allocate the money from internal borrowing to the subsidiary in the country B as much as possible. More formally, "The affiliate in the country A should rely all the money needed on external borrowing. And the affiliate in the country B should finance by internal borrowing as much as possible, and then borrow the rest from external sources."

However, the firm is exposed to foreign exchange risk if it finances in Japan. The firm exchanges yen with the local currency to invest in the host country, and the profits are again exchanged for yen for retrieval to Japan. On the other hand, if the firm borrows money in the local currency, the cost of capital is higher, but the borrowing and corresponding interests are hedged against the foreign exchange risk. Therefore, the multinational firm should balance the costs and benefits of both financing alternatives by adjusting the composition of internal and external borrowings. (See Appendix 2 for further discussion.).

(ii)Tax rates and financing options

If the internal capital market is efficient, tax consideration determines whether the foreign affiliate chooses vertical FDI or borrowing. For simplicity, here we assume that the cost of capital is the same for both countries. When we consider tax conditions, consolidated profit $R(K,k)$ should be divided into two parts: the one from the parent company, and another from the subsidiary, and both of them are subject to the taxes according to the respective tax rates. The multinational firm first chooses whether it allocates the capital to the subsidiary by vertical FDI or lending. And then the parent decides its own financing; whether it borrows from banks or raises the capital by issuing stocks (or uses the internal capital).

When the parent company borrows in the home country, it is appropriate for it to allocate the money to the foreign affiliate by lending (see Appendix for further discussion). Further, when the tax rate in the home country, τ_H, is higher than that in the foreign affiliate, τ_L, the firm should retain the profit of the affiliate, and refraining it from paying dividend to the parent company.

When the parent company borrows and lends the money to the foreign affiliate, the payment and receipt of interest cancel out each other, and the tax burden for the parent would not be increased. By borrowing, the affiliate enjoys tax shelter up to the amount of the interest payment, as long as it makes profit. This increases the retained earnings of the foreign affiliate compared to the case of vertical FDI. Of course, the tax shelter effect is the same when the affiliate borrows money from local banks.

4. Hypothesis and Empirical Results

Descriptive statistics on the financing of foreign affiliates are shown in the Table 1, 2 and A1. The data for U.S. multinational firms are taken from Desai (2004), which collected the data not only from Asia but from all over the world. For Japanese companies, we used the data collected by the Ministry of Economy, Trade and Industry (METI) for the "Report of the Overseas Business Activities of Japanese Companies," in which foreign affiliates of Japanese firms in Asia and the U.S. were analyzed. In addition, "debt" in our data represents only long-term debt, while Desai (2004) used the total debt. Further details on the data are in the Note of each of the tables.

We need to be careful about such difference in the data   Since the ratio of Bonds and Long Term Debt to Assets of Japanese foreign affiliates dramatically decrease, we use the time average of them . We find that the foreign affiliates of U.S. multinationals rely more than 80% of their total borrowings from external sources, while the affiliates of Japanese multinationals rely less than 70% of their long-term borrowings from external sources. Furthermore, the Japanese foreign affiliates rely 35% of their external borrowing from Japanese banks, and the borrowing from local banks constitutes only about 30% of their long-term debt.

------- Tables 1, 2 & A1 About Here ------

The hypothesis tested by Desai et al. (2004) is as follows. They denoted that B_{Lj} as the ratio of internal borrowing of jth foreign affiliate located in the country L, and b_{Ij} as the ratio of the jth subsidiary internal borrowings in the country L. They modeled

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$$B_{Lj} = a_0 + a_1 r_L + a_2 \tau_L + a_3 y_L + a_4 h_{Lj} \cdots,$$

$$b_{Lj} = c_0 + c_1 r_L + c_2 \tau_L + c_3 y_L + c_4 h_{Lj} \cdots,$$

where y_L is the degree of financial market development in the country L, h_{Lj} is the control variable that represents financial characteristics of the jth subsidiary in the country L. They expected $a_1 < 0$, $a_2 > 0$, $a_3 < 0$, $c_1 < 0$, $c_2 > 0$, and $c_3 > 0$[3]. The Tables A2, A3and A4 show the OLS regression results, with dummy variables that represent year and industry.

Considering the characteristics in Japan, we modify these ratios as

$$B_{Lj} = a_0 + a_1 r_L + a_2 \tau_L + a_3 y_L + a_4 h_{Lj} \cdots, \tag{3}$$

$$b_{Lj} = c_0 + c_1 r_L + c_2 \tau_L + c_3 y_L + c_4 h_{Lj} \cdots. \tag{4}$$

And we model J_b as the ratio of borrowing from the Japanese banks in the country L. We should examine which of internal or external borrowing is more close to the borrowing from the Japanese banks by examining

$$Jb_{Lj} = b_0 + b_1 r_L + b_2 \tau_L + b_3 y_L + b_4 h_{Lj} \cdots. \tag{5}$$

The Tables 4 shows the regression results regarding the Equation (3), (4), and (5), with a dummy variable that represents year.

------- Tables 4, A2, A3, and A4 About Here ------

Desai found certain consistent patterns within the regression results. Affiliates in countries with underdeveloped capital markets and weak creditor protections faced higher interest rates on arm's-1ength borrowing than did affiliates in other countries. Firms responded to higher interest rates by borrowing less from external sources and more from parent companies, on net reducing the total amount that they borrowed as a fraction of assets, since parent lending replaced between one half and three quarters of the reduction in external borrowing. Higher tax rates increased the use of debt from all sources, with related party borrowing exhibiting greater responsiveness to tax rate differences than did arm's-length borrowing.

We examined whether or not our data for Japanese multinationals show similar results[4]. Tax rates had the strongest positive influence on leverage, but the effect was somewhat weak (Table 4). We expected that the development of local financial markets affect financing decisions of multinationals, and we actually saw the expected result for creditor rights but only unstable effect on private credits[5]. Creditor rights had stable effects across regressions; that is, in countries with stronger creditor rights, foreign affiliates of Japanese multinationals borrow more from local branches of Japanese banks and local banks, and less from the parent companies. When

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[3] Desai's analysis did not explicitly take the effect of foreign exchange risk into account. It was unnecessary to incorporate the risk because most of Asian currencies were pegged with US dollar. Thus the only relevant difference was that for the cost of capital. In realistic setting, it was appropriate for multinational firms to rely more on internal capital in less developed financial markets, and more on external capital in developed markets. If it is the case, we can expect that internal capital market is functioning efficiently.

[4] We refer the results that include year dummy variable because it was significant excluding the Table 4.

[5] For private credits, we used 2 different measures, with 2 different (see the Table3 for details).

we saw the effect of log sales, a proxy for the scale of the subsidiary, we found that large-scale affiliates relied their borrowing more on local subsidiaries of Japanese banks or local banks, and smaller affiliates borrowed more from parent companies. The finding was consistent with that for U.S. multinationals.

The results above inferred that the local branches of Japanese banks were more close to local banks, and thus it would be better to classify it as a kind of external borrowing. At the same time, however, we could also see the fact as an evidence that the so-called "mainbank system" among Japanese companies extended to their foreign affiliates. That is, good foreign affiliates such as high ROA could borrow from local banks and not so good foreign affiliates with low ROA borrowed from the local branches of Japanese banks. In countries with high rate of inflations, foreign affiliates borrowed more from local banks, a fact which implied that affiliates had greater needs for local currencies in those countries.

We observed an apparent example that local branches of Japanese banks and parent companies played an alternative role to each other during the period of macro economy shock in the late 1990s. In 1998 in particular, Japanese banks were suffered from the so-called "Japan premium" as much as 100bp, reflecting their increased credit risk. They reduced lending in Japan, and the lending in foreign currencies had greater difficulty due to the premium. We had the data for only 1999, when foreign affiliates of Japanese multinationals reduced borrowing from Japanese banks greatly and instead increased that from local financial institutions. This period was after only 2 years from the currency crisis in Asia. This showed the almost same situation from the case of Japanese foreign affiliates in North America after 1990, analyzed by Klein, Peek and Rosengren (2002). They concluded that the withdrawal and shrinkage of the Japanese foreign affiliates in North America was mainly due to credit crunch caused by the downturn of the mainbanks in Japan.

5. Efficiency of Internal Capital Markets

So far, we have confirmed that Japanese multinational companies allocate their lending to their foreign affiliates according to the degree of development of local financial markets, a fact which implied the efficiency of the internal capital markets to some extent. Next, we analyze the efficiency more directly. It is possible by examining empirically whether or not the foreign affiliates encountered constraints of fund for their capital investments. Before we go to the analysis, we clarify the relationship between the financial constraints of foreign affiliates and the efficiency of internal capital markets. If the internal capital markets are efficient, a capital investment project of an affiliate is bounded only by the capital constraint of the entire group of the multinational firm, not by local capital constraint (for example, local credit constraint)[6].

Based on such understanding, if the affiliate encountered capital constraint of itself by local capital market imperfections, we can not see the efficiency of the internal capital market of the multinational group.

We approximate the affiliate's investment function as

$$\left(\frac{i}{k}\right)_{Lj} = f_0 + f_1 R_{Lj} + f_2 y_L.$$
(6)

where $(i/k)_{Lj}$ is the ratio of capital investment of the jth affiliate in country L, R_{Lj} is the profit ratio of that affiliate,

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[6] Instead, if the multinationals allocate their lending to affiliates with perfect efficiency, and if the affiliates determine their capital investments based on the aggregate budget of the borrowing and their retained earnings, the capital investments of affiliates should perfectly be explained by the aggregate amounts of funds.

and y_L is the proxy of capital market imperfections of country L. The variable f_0 is the cost of capital based on the capital constraint of the entire group of the multinational firm （Strictly this is not uniform but varies across the multinationals.）.

Under the setting above, we have the relationship $f_2 = 0$ when the firm have no local capital constraints, and the capital investment of affiliates, as in the case of ordinary investment functions, is explained only by the unique internal capital market's cost of capital and profit ratio of each subsidiary. On the other hand, if the firm encountered a constraint, we would see that f_2 was positive, and f_1 would equal or be close to zero[7].

The Table 5 shows the results of cross section OLS regression analysis of the foreign affiliates of Japanese multinational companies. The data include observations in 1996, 1999, and 2002 and aggregated as a pool. The result shows that capital investments of foreign affiliates were strongly affected only by the profit ratio. Estimated f_2 is not significant. In this sense, it seems appropriate to view that the foreign affiliates were not bounded locally and internal capital markets are efficient. However, we suppose that both in 1999 and 2002 in comparison to 1996 the amount of investments declined sharply since the capital cost had been considerably high for those periods reflecting the severe capital constraint entire the multinationals. But we show with empirical evidences that this does not spoil the efficiency of the internal capital market.

------------------ Table 5 About Here -------------------

6. Efficiency of Cash Management

Any firm needs a certain level of liquidity to operate without shortage of money. However, since the liquid assets have only low rates of return, it is important for the firm to raise ROA or ROE by reducing the slack, which is typically done by cash pooling. In particular, financing department in the headquarters or the subsidiary for internal financing controls overall flow of cash within the group companies, and adjust excess or shortage of money to reduce the total amount of liquid asset to the minimum to maintain necessary level for operations.

At the same time, it is also important for a multinational firm to control of the total level of long-term assets. The headquarters adjusts the surplus and shortage of cash within the group to limit the total amount of borrowing as little as possible. This practice, often called "netting," reduces overall debt level of the group by slimming down the balance sheets of the parent company and subsidiaries.

The ratio of liquid assets to sales of subsidiaries shows the effect of this practice. We should focus on manufacturing subsidiaries to examine the effect, however, our data for US multinationals did not have values of liquid assets of manufacturing subsidiaries. Thus, for comparison, we calculated the ratio of total assets to sales, and employed this ratio of manufacturing companies for the foreign affiliates of US multinationals, and the median of the same ratio across all industries for the Japanese counterpart[8].

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[7] Of course, the profitability of parent companies should play important role in determining capital investments because the parent and affiliates maximize the combined profits, as we saw in the Section 2. However, it is not possible to estimate the relationship between the two because we have only aggregated data as in the case of the US. Therefore, we use the profitability (in particular, EBIDTA/Sales) of affiliates instead;

[8] If possible, we should compare the cash conversion cycle {(accounts receivables/sales)+(inventories/cost of goods sold)-(accounts payables/cost of goods sold)*365. If a firm manages cash efficiently, this period should be shorten, the firm could raise ROE and ROA without shortage of cash. Since we have constraints of data available, we use the ratio of total assets to sales as a proxy.

The Table 6 shows the total asset turnover (total assets/sales) of companies across countries in 2002. For Japanese foreign affiliates, we see a tendency, with some exceptions (such as Pakistan), that affiliates have shorter periods of turnover (and thus more efficient use of assets) in countries with developed financial markets. In comparison with the U.S., in countries other than Hong Kong and Singapore, affiliates have longer periods of turnover, implying that financial markets in Asian countries are relatively less developed. This seems to be consistent with the fact that there is basically no difference in the period of turnover between Japanese and U.S. foreign affiliates, except for the affiliates in China. The affiliates of US multinationals in China has significantly shorter turnover period of 0.8, compared to 1.39 for the Japanese counterpart. This is worth worrying from the Japanese viewpoint. Chinese government imposes strict regulation on capital transactions in general, and multinational firms of any countries should use local financial institutions to set up cash management operation. Such regulation is of course burdensome for any multinationals, but Japanese multinationals would encounter greater hazards because Japanese banks were rather latecomers in China[9].

---------- Table 6 About Here -------

7. Conclusion

Foreign affiliates of Japanese multinational firms, in comparison with the U.S. counterpart, excessively relied on internal capital and borrowing from the parent companies. What followed was the borrowing from local banks, but it included the local branches of Japanese banks, that is, foreign branches of the mainbanks. In our sample periods, external borrowings of Japanese foreign affiliates were reduced rapidly because of parents firm's financial difficulties. Reduce of these external borrowing strengthen the function of internal capital market. We have confirmed that the internal capital market had a role to allocate fund to complement the cash need, according to the degree of development of the local capital market. However, as long as we observed from the empirical analysis of investment function, it seemed questionable whether or not the multinationals allocated the fund strategically to more profitable affiliates. So far, we did not have evidence whether this problem was specific to Japanese foreign affiliates because we had no information on the situation for the U.S. multinationals.

The problems of Japanese foreign affiliates lie in that they rely too less on financial institutions and capital market of the host country. There are two aspects. First, by doing so, the Japanese foreign affiliates encounter difficulty in procuring enough amounts of local currency. Since borrowing from Japanese banks is typically in yen or U.S. dollar, Japanese foreign affiliates can to acquire local currency less than enough, by which the affiliates can not hedge the foreign exchange risk efficiently. And second, concentration of the source of fund naturally involves the risk of cash shortage if credit crunch happens, as they encountered in 1999. In those days, the shortage was eased somewhat due to the lending from public sources, there is no guarantee for help in the next crisis.

The natural solution to these problems is to diversify the source of funds. In this regard, financing of foreign

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[9] Regarding the need for global cash management among Japanese companies and the associated problems were discussed in METI (2005) in detail.

affiliates is by far lagged behind that of the Japanese companies. It is understandable that the asymmetry of information is higher in foreign countries than in Japan. But foreign affiliates of U.S. multinationals have far advanced financing strategy in terms of diversification of the source of funds, by including local financing as options from the beginning. Such practice should also be inevitable for the Japanese multinationals to manage their risk effectively.

Appendix:

A-1. Tax System and Financing

Here we analyze the financing of an affiliate, based on a simple model that incorporates taxes. (see Feldstein, Hines, Jr., and Hubbard (1995), and Alworth (1988) for further discussion). Let K be the capital stock of the parent company, and k be that of the subsidiary, θ be the share of the stocks held by the parent company, and V be the firm value of the parent. The loan to the affiliate, B, is financed by bank borrowing of the parent company. This implies that it is cheaper for the parent to borrow because it has higher reputation compared to the subsidiary. Under the financing scheme, the asset balance of the parent company and the subsidiary is $K + B + \theta k = S + B$ and $k = s + B$, respectively. Here, S and s are equity capital recorded in the books of parent and the affiliate, respectively. And we assume that taxes paid outside the home country is fully deductible (see the parameter T, coefficient for tax adjustments, described below). Then we have

$$V = \theta \big[(Td + z) - r_H (k - B) \big] + (1 - \tau_H) \big[RK + r_H B - r_H B \big] - r_H K \qquad \text{(A-1)}$$

where

τ: tax rate, R: ROE, r: interest rate, D: Dividends from the subsidiary to the parent

z: Retained earning of the subsidiary $\quad z \equiv (1 - \tau_L)\big[Rk - r_H B \big] - d$

T: Coefficient for Tax Adjustment $\quad$ if $\tau_L > \tau_H$, $T = 1$

$\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ if $\tau_L < \tau_H$, $T = 1 - (\tau_H - \tau_L)$.

Let $\theta = 1$ for simplicity. Rearranging (A-1) yields

$$V = (1 - \tau_L)Rk + (1 - \tau_H)RK - (1 - T)d + r_H \big(\tau_L B - k - K \big). \qquad \text{(A-2)}$$

Financing strategy aims to maximize V by shifting d and B, under the Equation (A-2). Considering the Japanese tax rate, we assume two cases, that (i) $\tau_L < \tau_H$, and (ii) $T = 1 - (\tau_H - \tau_L) < 1$. To save the tax, it is an appropriate financing strategy that the parent company lends money B to the subsidiary unless it substantially raises the bankruptcy risk, and the subsidiary retains the earning rather than paying the dividend, d.

A-2. Foreign Exchange Risk and Debt Choice

Following the model by Lehmann, Sayek, and Kang (2004), here we analyze the strategy for financing capital investments, assuming the firm finances the investment for capital stock of the affiliates, k, in the local market, and the affiliate earns revenue Rk in the local currency. Let the foreign exchange rate today as 1, and tomorrow as a stochastic variable $\tilde{e}$. Then the firm value of the affiliate, $\tilde{v}$, follows the process

$$\tilde{v} \equiv (1 - \tau_L)(\tilde{e}Rk - \tilde{e}r_L b - r_H B) - r_H(k - b - B) + (\tilde{e} - 1)k, \qquad \text{(A-3)}$$

where b is the borrowing in the local currency, B is the borrowing from Japan in yen. Then we have financing from the affiliate's retained earning as $(k - b - B)$.

We evaluate the Equation (A-3) with the ordinary $E(\tilde{v}) - \frac{1}{2}\lambda\sigma^2(\tilde{v})$, and maximize it with respect to b and B.

Denote λ as the degree of absolute risk aversion. In particular, we let B as much as possible unless the firm goes bankruptcy, and we have

$$b = \frac{1}{r_L}\left[Rk - \frac{E(\tilde{e})(1 - \tau_L)r_L - r_H}{\lambda\sigma^2(\tilde{e})(1 - \tau_L)^2 r_L} \right] \qquad \text{(A-4)}$$

with respect to b. The firm uses the local borrowing b to hedge the foreign exchange risk.

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Table 1

Descriptive Statistics for Affiliates of Japanese Multinationals in 1996, 1999, 2002

		Benchmark Years				
		1996	1999	2002	All Years	U.S. affiliates
Number of Affiliates		1,099	1,072	1,969	4,140	32,342
Total Assets	Mean	2,348	4,283	3,579	3,434	57,861
	Standard Deviation	8,250	16,713	16,573	14,881	291,098
Sales	Mean	10,195	8,860	12,068	10,740	-
	Standard Deviation	52,738	36,156	96,088	73,946	-
Bonds and Long Term Debt/Assets	Mean	69.23%	45.58%	15.78%	37.68%	55.18%
	Standard Deviation	0.436	0.439	0.281	0.434	0.302
Long Term Debt Owed to Parent/Assets	Mean	19.69%	17.22%	6.81%	12.92%	8.01%
	Standard Deviation	0.370	0.333	0.196	0.295	0.249
Long Term Debt Owed to Japanese Bank/Assets	Mean	26.38%	14.85%	4.96%	13.21%	-
	Standard Deviation	0.403	0.306	0.159	0.296	-
Bonds and Long Term Debt Owed to Local Financial Institutions/Assets	Mean	23.17%	13.51%	4.00%	11.55%	44.39%
	Standard Deviation	0.394	0.293	0.143	0.282	0.2921

Note: The above panel provides descriptive statistics for dependent variables for all affiliates of Japanese multinationals by year and for the entire sample. Total Assets consist of current liabilities, bond, long term debt, and shareholders' equity. Bonds and Long Term Debt/Assets is the ratio of affiliate bonds and long term debt to long term capital. Long Term Debt Owed to Parent/Asset is the ratio of long term debt an affiliate borrows from its Japanese parent to total affiliate long term capital. Bonds and Long Term Debt Owed to Local Financial Institutions/Assets is the ratio of bonds and long term debt an affiliate borrows from non-parent source to total affiliate long term capital. Long Term Debt Owed to Affiliates and Branches of Japanese Commercial Banks/Assets is the ratio of long term debt an affiliate borrows from local affiliates and/or branches of Japanese commercial bank to total affiliate long term capital. We use a Census database called "*Kaigai Jigyou Katsudou Kihon Chousa*" prepared by the Ministry of Economy, Trade, and Industry. The survey is conducted by a questionnaire based on self-declaration survey forms and covers the whole Japanese foreign affiliates at the establishment level. The fifth column shows the corresponding value of the foreign affiliates of U.S. multinationals quoted from Desai *et al*. (2004).

Table 2

Descriptive Statistics for All Affiliate Years

	Mean	Median	St. Dev
Country Tax Rate	0.3129	0.3000	0.0753
Private Credit	0.8345	0.7525	0.3712
Creditor Rights Index	2.0377	2.0000	0.9679
Net PPE/Assets	0.3171	0.2069	4.3067
EBITDA/Assets	0.0384	0.0612	5.5580
EBITDA/Sales	0.0451	0.0622	2.9984
Log of Sales	2.9981	3.0290	0.9067
Average Rate of Inflation	0.0290	0.0225	0.0461

Note: The above panel reports descriptive statistics for independent variables for all affiliates across all years. Country Tax Rate is the median of effective tax rate in affiliates' host country measured on an annual basis. We quoted country tax rate data on the 2003 period of 15 host countries from KPMG's Corporate Tax Rate Survey. Private Credit is the ratio of private credit lent by deposit money banks to GDP, as provided in Beck, Demirguc-Kunt, and Levine (1999). Data of Private Credit is downloadable from the Internet at http://www.economics.harvard.edu/faculty/shleifer/Data/dataset_creditpaper_Nov_05.xls. Creditor Rights is an index of the strength of creditor rights developed in LaPorta, Lopez-de-Silanes, Shleifer, and Vishny (1998); higher levels of the measure which ranges from 0 to 4 indicate stronger legal protections. Net PPE/Assets is the ratio of affiliate net property, plant, and equipment to total affiliate assets. EBITDA/Assets is the ratio of affiliate earnings before interest, tax, depreciation, and amortization to total affiliate assets. Log of Sales is the natural log of affiliate sales. Average Rate of Inflation is the average percentage change in the consumer price index of an affiliate's host country over the 2000-2003 period, quoted from IMF/IFS online database. Investment/Capital Stock is affiliate investment standardized by its capital stock. Retained Earnings/net PPE is the ratio of retained earnings financed for affiliate capital expenditure to net PPE. Retained Earnings and Debt Owed to Parent/net PPE is the ratio of affiliate retained earnings plus debt owed to parent financed for affiliate capital expenditure to net PPE. Retained Earnings, Debt Owed to Parent, and the Other Source/net PPE is the ratio of affiliate retained earnings, debt owed to parent, and the other source financed for affiliate capital expenditure to net PPE.

Table 3

Cross Country Comparison of Tax Rate and Capital Market Depth

	Effective Tax Rate	Private Credit (1996)	Private Credit (1999)	Private Credit (2002)	Creditor Rights Index	Inflation Rate
United State	40.00%	52.54%	57.15%	62.60%	1	3.53%
Bangladesh	30.00%	ND	21.99%	26.32%	2	4.70%
Myanmar	ND	7.43%	7.84%	ND	ND	67.78%
Sri Lanka	35.00%	28.71%	27.91%	26.95%	2	18.08%
Hong Kong	16.00%	149.35%	166.65%	155.05%	4	-3.32%
India	36.75%	21.82%	23.54%	29.73%	2	6.07%
Indonesia	30.00%	51.21%	33.81%	21.15%	2	16.60%
Korea	29.70%	49.60%	66.30%	84.27%	3	5.43%
Lao PDR	ND	7.74%	6.72%	7.42%	0	ND
Malaysia	28.00%	82.92%	100.06%	96.83%	3	2.25%
Nepal	ND	21.56%	26.59%	ND	2	5.08%
Pakistan	35.00%	23.57%	24.61%	26.45%	1	4.80%
Philippines	32.00%	41.35%	42.78%	32.78%	1	6.97%
Singapore	22.00%	91.34%	109.37%	112.05%	3	0.68%
Thailand	30.00%	95.48%	110.94%	75.25%	2	2.03%
Cambodia	ND	4.20%	5.39%	6.43%	2	ND
Viet Nam	25.00%	7.79%	18.68%	39.51%	1	2.40%
Taiwan	25.00%	ND	ND	ND	2	0.93%
China	33.00%	85.30%	114.90%	126.88%	2	0.23%

Note: The above table provides comparison of corporate tax rate and capital market conditions across affiliate host countries. A creditor rights score of one is assigned when each of the following rights of secured lenders are defined in laws and regulations: First, there are restrictions, such as creditor consent or minimum dividends, for a debtor to file for reorganization. Second, secured creditors are able to seize their collateral after the reorganization petition is approved, i.e. there is no "automatic stay" or "asset freeze." Third, secured creditors are paid first out of the proceeds of liquidating a bankrupt firm, as opposed to other creditors such as government or workers. Finally, management does not retain administration of its property while pending the resolution of the reorganization. The index ranges from 0 (weak creditor rights) to 4 (strong creditor rights).

Table 4

The Impact of Taxation and Capital Market Conditions on Japanese Multinational Affiliate Capital Structure

	Leverage		Borrowing from Parent/Assets		Borrowing from Japanese Bank/Assets		Local Borrowing/Assets	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	0.9685	0.5330	0.4279	0.5392	0.1869	0.1144	0.3537	-0.1205
	0.0677	0.0858	0.0528	0.0660	0.0522	0.0652	0.0482	0.0622
	14.31	6.21	8.10	8.17	3.58	1.75	7.34	-1.94
Country Tax Rate	-0.3389	0.3838	-0.0719	-0.3647	-0.0143	0.1807	-0.2528	0.5677
	0.1153	0.1793	0.0899	0.1379	0.0889	0.1362	0.0821	0.1299
	-2.94	2.14	-0.80	-2.65	-0.16	1.33	-3.08	4.37
Private Credit	-0.1491		-0.0760		0.0444		-0.1175	
	0.0348		0.0271		0.0268		0.0248	
	-4.29		-2.80		1.66		-4.75	
Creditor Rights		0.0307		-0.0443		0.0201		0.0549
		0.0143		0.0110		0.0109		0.0104
		2.15		-4.03		1.85		5.30
Net PPE/Assets	-0.0001	-0.0001	-0.0001	-0.0001	0.0000	0.0000	0.0000	0.0000
	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
	-0.97	-0.95	-1.55	-1.48	0.20	0.25	0.12	-0.01
EBITDA/Assets	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	0.78	0.80	-0.39	-0.38	-1.17	-1.14	2.80	2.71
Log of Sales	-0.0047	-0.0048	-0.0193	-0.0197	0.0073	0.0065	0.0073	0.0085
	0.0029	0.0028	0.0023	0.0022	0.0023	0.0022	0.0021	0.0021
	-1.62	-1.68	-8.46	-9.05	3.23	2.99	3.49	4.14
Average Rate of Inflation	-0.4607	0.3642	-0.1678	0.1742	0.3222	0.1608	-0.6149	0.0293
	0.2310	0.1486	0.1802	0.1142	0.1781	0.1128	0.1645	0.1077
	-1.99	2.45	-0.93	1.52	1.81	1.42	-3.74	0.27

Table 4

(Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	-0.2236	-0.2353	-0.0184	-0.0262	-0.1292	-0.1139	-0.0760	-0.0952
Year Dummy (1999 = 1)	0.0169	0.0160	0.0132	0.0123	0.0130	0.0121	0.0120	0.0116
	-13.27	-14.74	-1.40	-2.13	-9.94	-9.40	-6.34	-8.23
	-0.5242	-0.5319	-0.1245	-0.1296	-0.2323	-0.2128	-0.1674	-0.1895
Year Dummy (2002 = 1)	0.0149	0.0140	0.0116	0.0108	0.0115	0.0107	0.0106	0.0102
	-35.16	-37.88	-10.70	-12.00	-20.21	-19.96	-15.76	-18.63
Number of Observations	3,863	4,140	3,863	4,140	3,863	4,140	3,863	4,140
R-squared	0.2780	0.2724	0.0626	0.0660	0.1023	0.0938	0.0857	0.0925

Note: The dependent variables are leverage ratio, borrowing from parent/assets, borrowing from Japanese bank/assets, and local borrowing/assets, shown as the above. Country Tax Rate is the median of effective tax rate in affiliates' host country measured on an annual basis. Private Credit is the ratio of private credit lent by deposit money banks to GDP, as provided in Beck, Demirguc-Kunt, and Levine (1999). Creditor Rights is an index of the strength of creditor rights developed in LaPorta, Lopez-de-Silanes, Shleifer, and Vishny (1998); higher levels of the measure which ranges from 0 to 4 indicate stronger legal protections. Net PPE/Assets is the ratio of affiliate net property, plant, and equipment to total affiliate assets. EBITDA/Assets is the ratio of affiliate earnings before interest, tax, depreciation, and amortization to total affiliate assets. Log of Sales is the natural log of affiliate sales. Average Rate of Inflation is the average percentage change in the consumer price index of an affiliate's host country over the 2000-2003 period, quoted from IMF/IFS online database. Year Dummy (1999 = 1) is the dummy variable that indicates 1 if the year is 1999. Year Dummy (2002 = 1) is the dummy variable that indicates 1 if the year is 1999. And the base group should be the year 1996. For each cell, we report the coefficient in upper row, the standard error in middle row, and the *t*-statistic in lower row.

Table 5

Affiliate Investment Function

Dependent Variable: Investments/Assets

	Model-I	Model-II
Constant	0.2458	0.4524
	1.1751	1.1120
	0.21	0.41
EBITDA/Assets	0.4765	0.4768
	0.0153	0.0148
	31.08	32.19
Natural Log of Sales	0.1242	0.1140
	0.1253	0.1176
	0.99	0.97
Private Credit	0.0645	
	0.7146	
	0.09	
Creditor Rights		-0.0770
		0.2576
		-0.30
Year Dummy (1999 = 1)	-1.0267	-0.9637
	0.7158	0.6606
	-1.43	-1.46
Year Dummy (2002 = 1)	-1.5387	-1.4519
	0.6334	0.5803
	-2.43	-2.50
Number of Observations	3,866	4,142
R-squared	0.2042	0.2044

Note: The dependent variable is the ratio of affiliate investment to affiliate total assets. All regressions are estimated by ordinary least squares. Affiliate assets are defined as the amount of interest-bearing debt and shareholders equity. EBITDA/Assets is the ratio of affiliate earnings before interest, taxes, depreciation and amortization to assets. Log of Sales is the natural log of affiliate sales. Private Credit is the ratio of private credit lent by deposit money banks to GDP. Creditor Rights is an index of the strength of creditor rights. Year Dummy (1999 = 1) is the dummy variable that indicates 1 if the year is 1999. Year Dummy (2002 = 1) is the dummy variable that indicates 1 if the year is 1999. And the base group should be the year 1996. For each cell, we report the coefficient in upper row, the standard error in middle row, and the t-statistic in lower row.

Table 6

Cross Country Comparison of Asset Turnover Period

	Nimber of Obs.	Mean	Median of Japanese Affiliates	Median of American Affiliates
Myanmar	19	8.474	4.045	-
Nepal	2	3.584	3.584	-
Cambodia	5	1.322	1.736	-
Lao PDR	1	1.611	1.611	-
Viet Nam	192	6.042	1.488	-
China	2,447	9.194	1.390	0.800
Bangladesh	11	2.007	1.135	-
Sri Lanka	28	2.857	1.111	-
Indonesia	1,071	7.152	1.042	1.020
India	202	5.661	1.033	1.070
Philippines	621	8.493	1.011	0.860
Brunei	8	1.070	0.933	-
Thailand	1,819	4.944	0.919	0.840
Korea	783	4.048	0.887	0.960
Malaysia	1,277	6.858	0.833	0.530
Taiwan	1,372	3.001	0.811	0.790
United States	5,632	34.420	0.766	-
Pakistan	31	3.959	0.669	-
Singapore	1,689	14.697	0.655	0.990
Hong Kong	1,582	10.233	0.533	0.670

Note: Asset Turnover Period is defined as the ratio of the total asset of affiliates of Japanese companies to firms' one year sales. For comparison we also quote the median of the asset turnover period of affiliates of U.S. companies in the right column. We quote U.S. data from "U.S.Direct Investment Abroad: Operations of U.S.Parent Companies and Their Foreign Affiliates," by Bureau of Economic Analysis.

Figure 1

The Relationship between Tax Rates and Affiliate Leverage, 2002
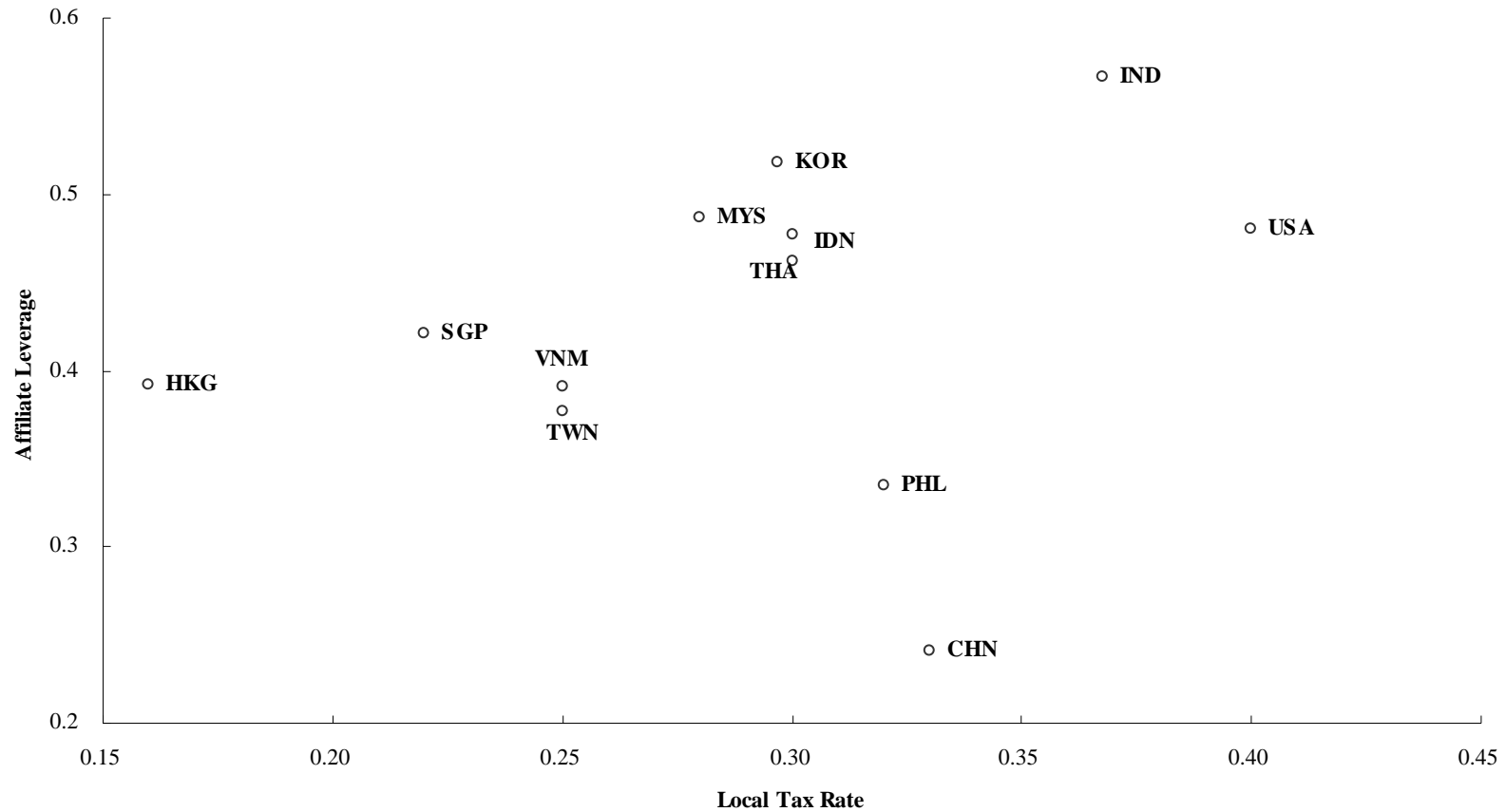
Note: The figure provides a scatter plot of the relationship between affiliate leverage, on the vertical axis, and local tax rates, on the horizontal axis, for 2002. Affiliate leverage is the country-level mean of ratio of bonds and long term debt to total log term capital Country Tax Rates are the same as the first column in Table 3.

Figure 2

The Relationship between Creditor Rights and Affiliate Leverage, 2002

☐ Ratio of Parent Borrowing to Assets ☐ Ratio of Main Bank Borrowing to Assets ☐ Ratio of Arms Length Borrowing to Assets
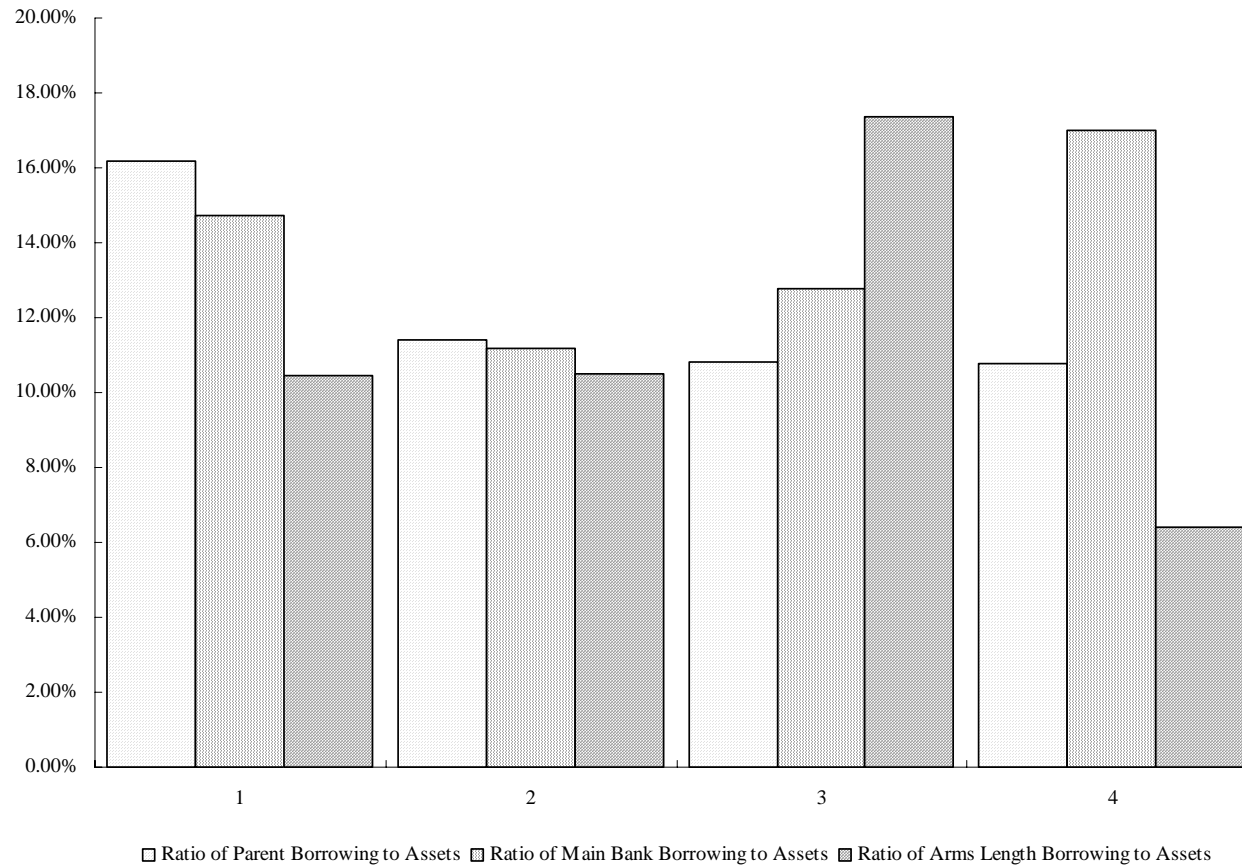
Note: The figure provides the mean ratio of parent borrowings to assets, bank borrowing to assets, and arms-length borrowings to assets by rating for creditor rights in 2002.

Table A1

Descriptive Statistics of U.S. Multinationals (quoted from Desai *et al*., 2003)

		Benchmark Years			
		1982	1989	1994	All Years
Number of Affiliates		14,918	15,243	17,898	32,342
Number of Parents		1,902	1,989	2,373	3,680
Assets	Mean	39,213	57,209	73,762	57,861
	Median	8,401	10,987	12,704	10,597
	Standard Deviation	181,507	290,062	356,849	291,098
Current Liabilites and Long Term Debt/Assets	Mean	0.5707	0.5434	0.5446	0.5518
	Median	0.5574	0.5256	0.5277	0.5364
	Standard Deviation	0.2893	0.3000	0.3131	0.3023
Interest Rate on Non-Parent Liabilities and Debt	Mean	0.0595	0.0435	0.0298	0.0493
	Median	0.0231	0.0138	0.0099	0.0163
	Standard Deviation	0.1010	0.0883	0.0642	0.0922
Interest Rate on Non-Trade Account Liabilities and Debt	Mean	0.1133	0.0659	0.0485	0.0775
	Median	0.0744	0.0269	0.0180	0.0367
	Standard Deviation	0.1449	0.1196	0.0974	0.1267
Net Current Liabilities and Long Term Debt Owed to Parent/Assets	Mean	0.0845	0.0705	0.0846	0.0801
	Median	0.0077	0.0032	0.0022	0.0041
	Standard Deviation	0.2464	0.2357	0.2616	0.2490
Current Liabilities and Long Term Debt Owed to Non-Parents/Assets	Mean	0.4626	0.4433	0.4306	0.4439
	Median	0.4329	0.4098	0.3840	0.4074
	Standard Deviation	0.2798	0.2916	0.3008	0.2921

Descriptive Statistics for all Affiliate Years	Mean	Median	St. Dev
Country Tax Rate	0.3431	0.3404	0.1228
Private Credit	0.7927	0.7945	0.4478
Creditor Rights	1.9953	2.0000	1.3211
Net PPE/Assets	0.2360	0.1623	0.2357
EBITDA/Assets	0.1479	0.1378	0.2138
Log of Sales	9.5549	9.5540	2.0431
Political Risk	0.2462	0.1906	0.1165
Average Rate of Inflation	0.4293	0.0561	1.5455
Share of Debt from Non-Parent Sources	0.8148	0.9706	0.2795

The Regression of Leverage of Affiliate of U.S. parent on Tax Rates and Capital Market Conditions (quoted from Desai *et al.*, 2003)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Dependent Variable: Current Liabilities and Long Term Debt/Assets									
Constant	0.4657	0.6827	0.4545	0.6878	0.4129	0.5782	0.4859	0.2942	0.4684	0.1690
	(0.0073)	(0.0665)	(0.0094)	(0.0799)	(0.0110)	(0.0496)	(0.0278)	(0.1020)	(0.0265)	(0.1125)
Country Tax Rate	0.2508	0.2646	0.2469	0.2608	0.3082	0.3206	0.2499	0.2560	0.2713	0.2789
	(0.0230)	(0.0205)	(0.0250)	(0.0235)	(0.0273)	(0.0226)	(0.0314)	(0.0315)	(0.0309)	(0.0299)
Private Credit			0.0166	-0.0051			0.0140	0.0060		
			(0.0061)	(0.0052)			(0.0091)	(0.0078)		
Creditor Rights					0.0153	0.0082			0.0114	0.0060
					(0.0030)	(0.0020)			(0.0031)	(0.0024)
Net PPE/Assets							-0.1430	-0.0199	-0.1554	-0.0239
							(0.0147)	(0.0160)	(0.0146)	(0.0166)
EBITDA/Assets							-0.4443	-0.4192	-0.4494	-0.4266
							(0.0149)	(0.0162)	(0.0152)	(0.0166)
Log of Sales							0.0027	0.0005	0.0036	0.0018
							(0.0018)	(0.0022)	(0.0018)	(0.0022)
Political Risk							0.1719	0.1703	0.1257	0.1737
							(0.0364)	(0.0338)	(0.0338)	(0.0326)
Average Rate of Inflation							-0.0040	-0.0021	-0.0016	-0.0012
							(0.0017)	(0.0015)	(0.0018)	(0.0015)
Parent, Industry, and Year Fixed Effects?	N	Y	N	Y	N	Y	N	Y	N	Y
No. of Obs.	44,460	44,460	42,639	42,639	39,995	39,995	19,983	19,983	19,209	19,209
R-Squared	0.0102	0.2286	0.0095	0.2329	0.0150	0.2460	0.1107	0.3339	0.1180	0.3453

The Regression of Borrowings from U.S. parent/Assets on Tan Rates and Capital Market Conditions (quoted from Desai *et al.*, 2003)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Dependent Variable: Net Current Liabilities and Long Term Debt Owed to Parent/Assets									
Constant	0.0485	-0.1683	0.0691	-0.0649	0.0572	0.1000	0.1124	-0.1324	0.1141	0.0287
	(0.0064)	(0.1691)	(0.0071)	(0.0387)	(0.0079)	(0.0806)	(0.0231)	(0.1082)	(0.0207)	(0.0494)
Country Tax Rate	0.0918	0.0515	0.0821	0.0689	0.0808	0.0501	0.1230	0.0800	0.1262	0.0805
	(0.0180)	(0.0156)	(0.0171)	(0.0162)	(0.0197)	(0.0190)	(0.0235)	(0.0236)	(0.0250)	(0.0254)
Private Credit			-0.0201	-0.0314			-0.0091	-0.0147		
			(0.0045)	(0.0038)			(0.0082)	(0.0065)		
Creditor Rights					-0.0024	-0.0042			-0.0020	-0.0037
					(0.0020)	(0.0013)			(0.0022)	(0.0016)
Net PPE/Assets							0.0578	0.1013	0.0481	0.0918
							(0.0110)	(0.0143)	(0.0113)	(0.0146)
EBITDA/Assets							-0.2189	-0.2145	-0.2097	-0.2055
							(0.0118)	(0.0127)	(0.0121)	(0.0126)
Log of Sales							-0.0068	-0.0018	-0.0073	-0.0023
							(0.0014)	(0.0018)	(0.0014)	(0.0017)
Political Risk							0.0774	0.1108	0.0730	0.1297
							(0.0272)	(0.0252)	(0.0269)	(0.0272)
Average Rate of Inflation							-0.0002	0.0004	0.0005	0.0005
							(0.0010)	(0.0010)	(0.0011)	(0.0010)
Parent, Industry, and Year Fixed Effects?	N	Y	N	Y	N	Y	N	Y	N	Y
No. of Obs.	46,713	46,713	44,595	44,595	41,702	41,702	20,866	20,866	20,007	20,007
R-Squared	0.0021	0.2235	0.0026	0.1658	0.0015	0.2504	0.0489	0.2791	0.0457	0.2869

Table A4
The Regression of External Borrowings/Assets on Tan Rates and Capital Market Conditions (quoted from Desai *et al.*, 2003)

	Dependent Variable: Current Liabilities and Long Term Debt Owed to Non-Parents/Assets									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Constant	0.3544	0.2535	0.3364	0.2706	0.3108	0.5963	0.2898	-0.0433	0.2771	0.7048
	(0.0065)	(0.0292)	(0.0086)	(0.0298)	(0.0103)	(0.0633)	(0.0266)	(0.0590)	(0.0264)	(0.0896)
Country Tax Rate	0.2618	0.2831	0.2434	0.2472	0.3012	0.3218	0.2119	0.2261	0.2342	0.2577
	(0.0217)	(0.0197)	(0.0235)	(0.0226)	(0.0263)	(0.0229)	(0.0297)	(0.0314)	(0.0307)	(0.0311)
Private Credit			0.0323	0.0218			0.0183	0.0196		
			(0.0057)	(0.0053)			(0.0085)	(0.0084)		
Creditor Rights					0.0149	0.0107			0.0098	0.0075
					(0.0030)	(0.0024)			(0.0034)	(0.0029)
Net PPE/Assets							-0.1433	-0.0249	-0.1499	-0.0251
							(0.0170)	(0.0159)	(0.0172)	(0.0167)
EBITDA/Assets							-0.2635	-0.2440	-0.2688	-0.2502
							(0.0145)	(0.0155)	(0.0148)	(0.0158)
Log of Sales							0.0118	0.0043	0.0126	0.0050
							(0.0017)	(0.0021)	(0.0017)	(0.0022)
Political Risk							0.0642	0.0564	0.0309	0.0400
							(0.0390)	(0.0355)	(0.0375)	(0.0341)
Average Rate of Inflation							-0.0010	-0.0007	0.0005	-0.0002
							(0.0015)	(0.0014)	(0.0017)	(0.0015)
Parent, Industry, and Year Fixed Effects?	N	Y	N	Y	N	Y	N	Y	N	Y
No. of Obs.	45,152	45,152	43,290	43,290	40,568	40,568	20,139	20,139	19,348	19,348
R-Squared	0.0119	0.2293	0.0121	0.2339	0.0153	0.2453	0.0592	0.2931	0.0637	0.3005