

**Salomon Brothers**

Financial Strategy Group

# The Cost of Capital in Japan and the United States: A Tale of Two Markets

by  
Niso Abuaf  
Kathleen Carmody

July 1990

---

The authors wish to acknowledge Hiroo Awano, Richard C. Berner, Peter B. Blanton, Cal Johnson, Eric B. Lindenberg and Kevin L. Thatcher for their helpful comments and suggestions. We also wish to thank Robin Capaccio, Mark S. Perwien, Matt Singleton and Steve Zimmer for providing us data on corporate marginal tax rates and debt-to-equity ratios; Dan Concannon, Erica Konatsotis, Patty Phillips, and Leslie Soler for graphics assistance; and Kim Grigas for secretarial support.

---

---

# The Cost of Capital in Japan and the United States: A Tale of Two Markets

by  
Niso Abuaf  
Kathleen Carmody

<b>Table of Contents</b>	<b>Page</b>
Summary	1
Introduction	1
Conventional Wisdom and Supporting Evidence	4
•Debt Financing	4
•Equity Financing	5
Modern-Finance Theory and Supporting Evidence	9
•The Capital Asset Pricing Model's Apparent Conclusion	10
•Adjusting The Capital Asset Pricing Methodology	10
Other Considerations	12
Financial Strategies to Benefit from Japan's Cost of Capital Advantage	13
•Equity Carve-Outs	13
•Convertibles	14
Conclusion	15
<b>Figure 1. Japanese and U.S. Cost of Capital — A Flowchart</b>	<b>3</b>
<b>Figure 2. Japanese and U.S. Government Bond Yields, 1973-89</b>	<b>4</b>
<b>Figure 3. Japanese and U.S. Corporate Bond Yields, 1973-89</b>	<b>5</b>
<b>Figure 4. Japanese and U.S. Real Economic Growth and Inflation Rates, 1973-89</b>	<b>6</b>
<b>Figure 5. Japanese and U.S. Debt-to-Equity Ratios, 1971-89</b>	<b>7</b>
<b>Figure 6. Price-to-Earnings Ratios, Jan 1973-Apr 1990</b>	<b>8</b>
<b>Figure 7. Japanese and U.S. Cost of Equity: Adjusted Earnings-to-Price Ratios, 1980-89</b>	<b>8</b>
<b>Figure 8. Japanese and U.S. Dividend Yields, 1973-89</b>	<b>9</b>
<b>Figure 9. Japanese and U.S. Equity Market Risk Premiums, 1973-89</b>	<b>11</b>
<b>Figure 10. Summary of Empirical Results</b>	<b>12</b>
<b>Figure 11. Japanese and U.S. Quality and Maturity Premiums, 1973-89</b>	<b>13</b>

---

# The Cost of Capital in Japan and the United States: A Tale of Two Markets

---

by  
Niso Abuaf  
Kathleen Carmody

---

## Summary

---

This paper attempts to guide financial professionals who must have a solid framework and accompanying empirical evidence to evaluate equity cost of capital (CoC) differences between Japan and the United States. The report should be helpful to executives charged with:

- evaluating cross-border capital budgeting projects, including mergers and acquisitions;
  - addressing governmental policy and regulatory authorities; and
  - implementing financial strategies implied by international CoC differences.
- 

According to conventional wisdom, which relies on measures such as price-to-earnings (P/E) ratios and dividend yields, the Japanese equity CoC has been lower than in the United States, over the last two decades. However, according to modern-finance theory, which primarily depends upon observed equity market returns, the Japanese equity CoC, has been higher than in the United States during this same period .

Fortunately, there is more here than meets the eye since both the conventional and modern approaches neglect the effects of divergent business practices and economic structures which prevail in Japan and the United States. After adjusting for factors such as accounting conventions, economic growth rates, inflation rates, cross-holdings of Japanese shares, and debt-to-equity (D/E) ratios, the conventional and modern approaches converge to a uniform conclusion. Depending on the methodology, we conclude that the Japanese inflation-adjusted equity CoC, in the past two decades, has been about 1.5%-3% lower than in the United States.

This implies that firms should finance themselves as much as possible in the Japanese equity market. To benefit from such an equity CoC advantage, we suggest that multinational corporations consider a carve-out of their Japanese subsidiaries. In situations where a multinational wants to achieve a public U.S. market presence, U.S. convertible securities exchangeable (but cash settled) into the shares — American Depositary Receipts (ADRs) or American Depositary Shares (ADSs) — of the Japanese parent would at least partially extract the benefits of a lower Japanese equity CoC.

---

## Introduction

---

The dramatic flows of capital between Japan and the United States in recent years have been attributed to a wide variety of causes. One of the most frequently cited factors is the significant CoC difference between the two countries. Does such a CoC difference indeed exist? How large is it? Is it likely to persist? Are there strategies to take advantage of it? Only by answering such questions can multinational companies properly evaluate investment decisions and finance them cost-effectively.

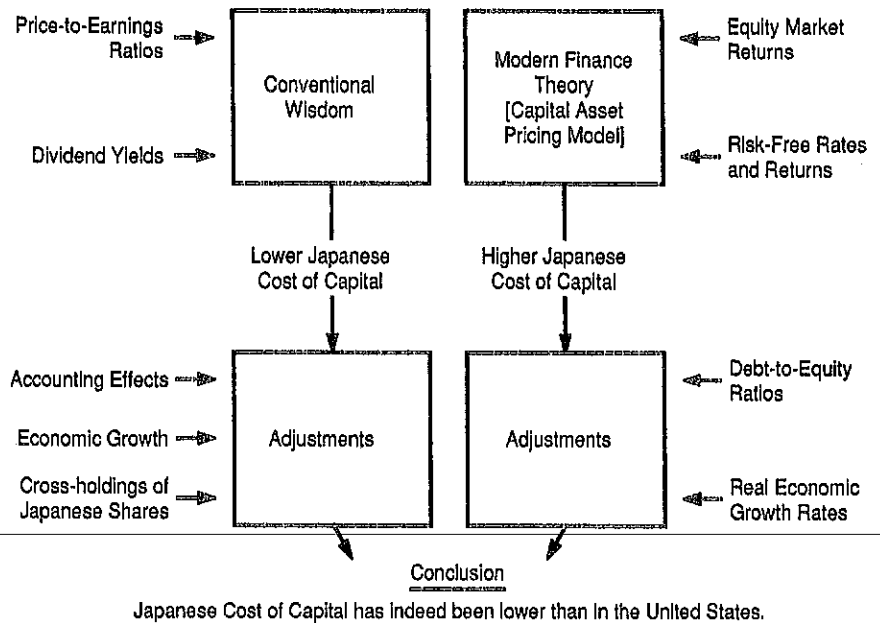
Most of the recent studies comparing the equity CoC in Japan and the United States conclude that over the past two decades, the Japanese equity CoC has been lower than in the United States. For the most part, these analyses examine P/E multiples and dividend yields in both countries as indicators of the equity CoC. We characterize these analyses as conventional. However, other methods may be employed to calculate the equity CoC. In particular, the capital asset pricing methodology compares historical equity-market returns and returns on risk-free government bonds, labeling the difference as the equity market risk premium (EMRP). This modern-finance approach suggests that over the past two decades, the Japanese equity CoC has been higher than in the United States.

Such methodological differences coupled with the conflicting conclusions that they imply provide little guidance for the corporate treasurer and the corporate finance professional who must rely on fairly precise CoC estimates in their decision making. Corporate treasurers must estimate international CoC differences, not only to execute the best financing strategies, but also to represent their firms in the most favorable light when dealing with regulators and policy authorities. Likewise, international corporate finance professionals must rely on good CoC estimates to establish hurdle rates for investments and also to discount cash-flow streams domiciled in various countries and risk classes.

This report attempts to resolve the controversies surrounding equity CoC estimates for Japan and the United States. In clarifying the associated ambiguities, we hope to provide guidelines and equity CoC estimates that corporate treasurers and corporate finance professionals can confidently use in their daily activities. Where appropriate, we also suggest financing strategies to take maximum advantage of existing CoC differences between Japan and the United States.

As Figure 1 illustrates, estimates derived from both the conventional and modern approaches fail to account for a variety of underlying differences between the Japanese and U.S. markets. If these estimates are adjusted for important disparities such as differing accounting conventions, inflationary effects, real economic growth rates, cross-holdings of Japanese shares, and D/E ratios, then they may be more properly compared.

**Figure 1. Japanese and U.S. Cost of Capital — A Flowchart**



In this report, we first apply the tools used in conventional accounting and financial analysis to compare the Japanese debt and equity CoC to that of the United States. Though the paper focuses mainly on the equity CoC, we briefly touch upon the debt CoC since the latter is a fundamental building block of the former. We show that between 1973-89, inflation-adjusted yearly yields on Japanese corporate bonds, on average, have been approximately 2.2% per year lower than yields on U.S. corporates. Analogously, approximating the equity CoC with earnings-to-price ratios adjusted for differences in accounting conventions, real economic growth and inflation rates, and cross-holdings of Japanese shares implies that Japan's cost-of-equity financing has been about 3.3% per year lower, on average.

Second, we apply the tools of modern-finance theory to compare the Japanese versus the U.S. equity CoC. Comparing unadjusted EMRPs in the two countries appears to imply that the Japanese equity CoC has been higher than in the United States.<sup>1</sup> Specifically, the unadjusted Japanese EMRP was about 3.4% per year higher in 1973-89. Adjustments for differences in D/E ratios and real economic growth rates reverse this conclusion, indicating that the inflation-adjusted (real) Japanese equity CoC has been approximately 1.4% lower than in the United States. Comfortingly, the conventional and modern-finance approaches now converge to a uniform conclusion.

Third, we list other considerations such as the highly cooperative Japanese business environment, which seems to have significantly contributed to the historically lower Japanese CoC. Finally, we review some financing strategies that can benefit from Japan's equity CoC advantage, bearing in mind that the past may not necessarily repeat itself in the future.<sup>2</sup>

<sup>1</sup> EMRP is defined as observed equity market returns minus long-term government bond returns. The EMRP can alternatively be defined as observed equity market returns minus expected government-bond yields. For international comparisons, subtracting away total government-bond returns seems more appropriate since this reduces relative equity-market return biases caused by interest-rate changes. For a detailed discussion of the relevant issues, see Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation, Yearbooks 1988, 1989 and 1990*, Chicago, IL.

<sup>2</sup> As discussed later in the report, in the 1970s and 1980s, the Japanese equity market significantly outperformed the other major equity markets. However, this was not the case during the first quarter of 1990 when Japan's equity market lost about a quarter of its value while the rest of the world's equity markets remained roughly stable or even rose in value. This episode underscores the caveat that the past may not necessarily repeat itself.

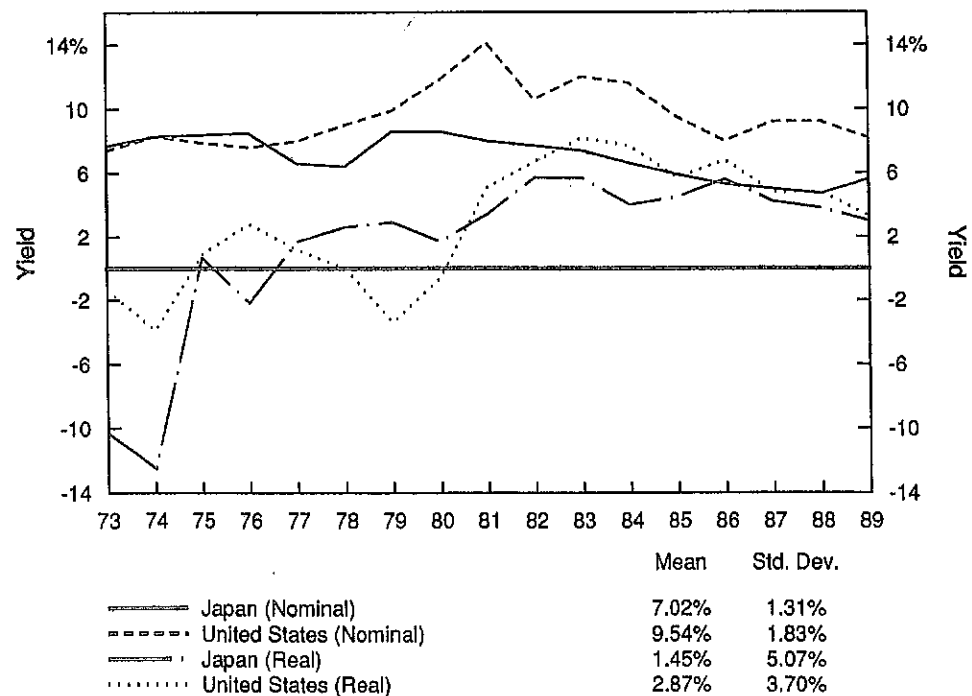
## Conventional Wisdom and Supporting Evidence

Conventional wisdom states that the costs of both debt and equity capital have been lower in Japan than in the United States.<sup>3</sup> In this section, we test this wisdom by analyzing the historical costs of debt and equity financing in Japan versus the United States. All comparisons refer to the 1973-89 period and, unless otherwise stated, deal with yearly averages. We chose this period partially because of data availability and partially because of the start of a new floating-exchange-rate regime among the industrialized countries in 1973.

### Debt Financing

The cost of debt financing can be readily observed by examining historical yields on government and corporate bonds. As shown in Figure 2, nominal (that is, readily observed) yields on Japanese government bonds, on average, have been 2.5% lower than in the United States. The inflation-adjusted (real) yield differential, however, narrows to a still significant 1.4%. Remarkably, this wedge has almost always favored the Japanese government borrower since 1980.

Figure 2. Japanese and U.S. Government Bond Yields, 1973-89



The cost of government borrowing represents one of the most important building blocks for measuring all other types of borrowing and equity CoC within an economy. Consequently, it is very likely that a particular country's cost advantage in public sector financing is also replicated in its private sector. Indeed, as Figure 3 illustrates, the cost of Japanese corporate debt financing on average, has been 3.3% and 2.2% lower than in the United States, as measured in nominal and real terms, respectively.

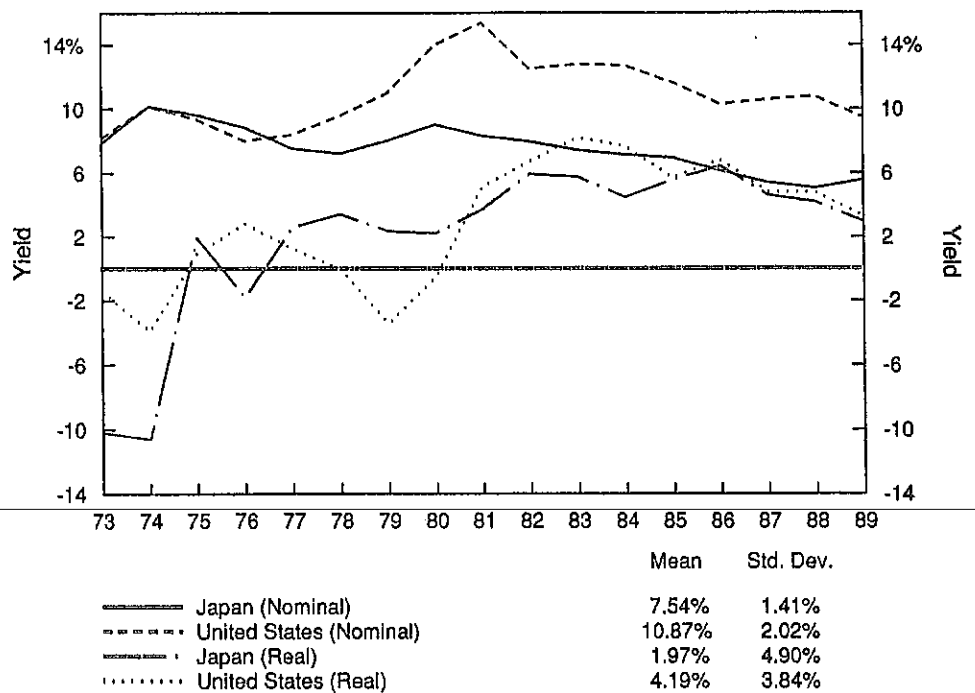
As the above estimates indicate, the inflation-adjusted Japanese cost of debt has not been as favorable as the nominal one. Such empirical evidence at least partially supports theoretical reasoning, suggesting

<sup>3</sup> When discussing the equity CoC, this paper uses an investment banker's perspective, ignoring concepts such as the rental cost of capital frequently used by macroeconomists. For a discussion of the macroeconomist's approach, see Rudiger Dornbusch and Stanley Fischer, *Macroeconomics*, McGraw-Hill, New York, 1981.



that nominal interest rates move in step with inflationary expectations.<sup>4</sup>

**Figure 3. Japanese and U.S. Corporate Bond Yields, 1973-89**



### Equity Financing

Unlike expected debt yields, expected total equity returns are not readily observable. Even though this presents a variety of measurement problems, methodologies have been developed to estimate expected equity returns. In this section, we discuss conventional methodologies based on observed accounting and financial measures, and in the following section, we discuss the modern-finance approach to equity CoC estimation.

Theoretically, the cost of equity equals economic profits per equity investment plus the expected profit growth rate. Conventional methodologies develop proxies for economic profits per equity investment by using observed equity market prices, reported accounting data and realized dividend yields. The most common measures are the inverse of the P/E ratio (that is, the earnings-to-price, E/P ratio) and the dividend yield (defined here as current dividends divided by share price). Because of differences in accounting practices in various countries, accounting earnings do not always reflect true economic earnings. In addition, to conform with the theory stated above, expected profit growth rates should also enter into an equity CoC calculation.

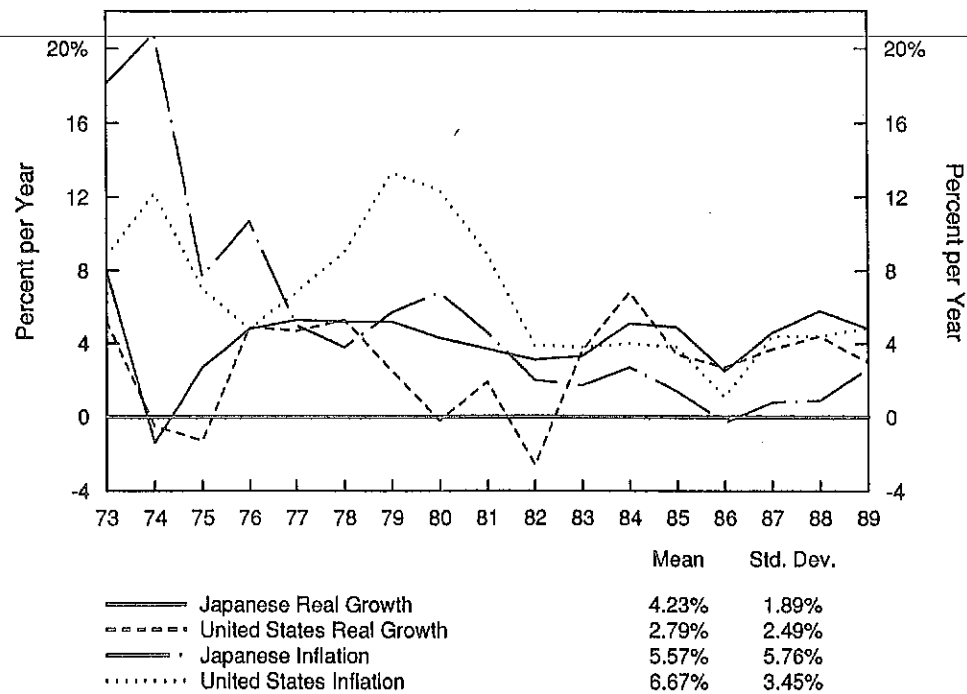
<sup>4</sup> In addition, international interest-rate differentials embody expectations about future exchange-rate changes. Thus, an exhaustive study of international CoC differences should incorporate foreign-exchange market developments. Unfortunately, over our sample period, long-dated foreign-exchange markets were not fully developed, rendering an exchange-rate adjusted equity CoC comparison nearly impossible. Consequently, this study relies primarily on inflation-adjusted CoC comparisons.

In particular, a theoretically correct equity CoC comparison should account for:

- how divergent inflation rates affect reported earnings as a result of effects on reported depreciation rates, reported inventory profits, and nominal assets and liabilities;<sup>5</sup>
- cross-holdings of Japanese shares;<sup>6</sup> and
- different real economic growth rates.

Several studies have shown that the net sum of these factors tends to understate Japanese earnings relative to U.S. earnings — particularly given the higher U.S. inflation rate, Japanese D/E ratio, and Japanese real economic growth rate over the past two decades (see Figures 4 and 5).<sup>7</sup> This understatement of earnings results in inflated P/E ratios and consequently, an exaggeratedly lower equity CoC for Japan.

**Figure 4. Japanese and U.S. Real Economic Growth and Inflation Rates, 1973-89**

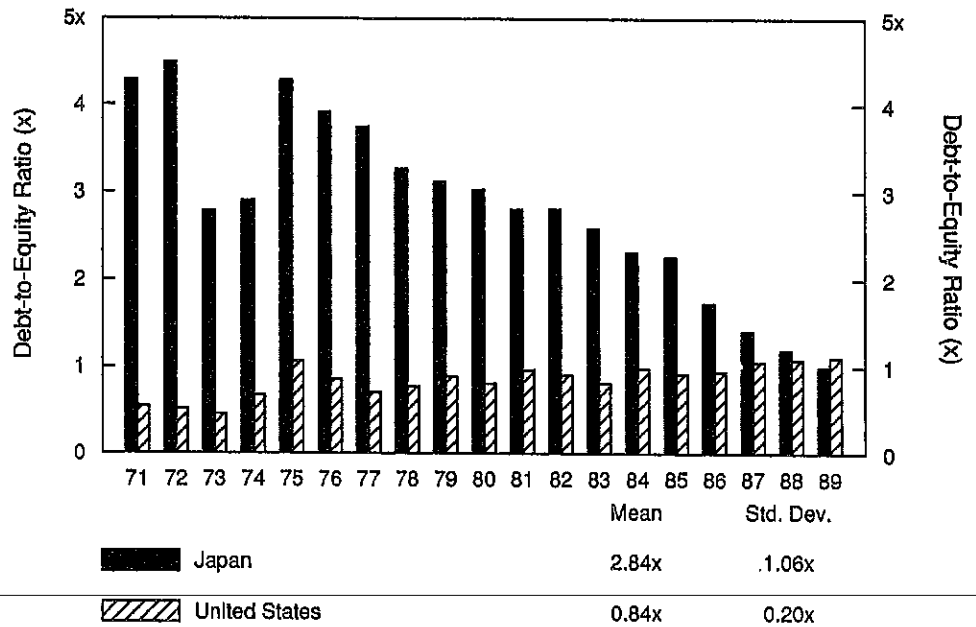


<sup>5</sup> In an inflationary environment, reported earnings underestimate true economic earnings because historical costs used for accounting allowances typically fall short of replacement values for plant and equipment. On the other hand, inflation causes reported earnings to overestimate true economic earnings, especially if the cost of goods sold is treated on a first-in first-out basis. In addition, inflation causes the overstatement (understatement) of real asset (liability) returns. For most nonfinancial corporations, this implies that inflation causes an understatement of accounting earnings, particularly when the magnitudes of nominal liabilities exceed nominal assets.

<sup>6</sup> Japanese firms own substantial amounts of each other's shares. If a Japanese company owns less than 20% of another company's shares, it cannot report the retained earnings of the company being held. Because cross-held shares will likely be included in the market's valuation of the holding company, a serious overstatement of Japanese P/Es will occur.

<sup>7</sup> For a more detailed discussion of these issues, see Ando, A. and Auerbach A.J. "The Cost of Capital In the United States and Japan: A Comparison." *Journal of the Japanese and International Economies*, Vol. 2, 1988, pp. 134-158. Frankel, J. "Japanese Finance: A Survey." National Bureau of Economic Research, The U.S. and Japan Conference Paper, October 1989. McCauley, R.N. and Zimmer, S.A. "Explaining International Differences in the Cost of Capital." *Federal Reserve Bank of New York Quarterly Review*, Summer 1989, pp. 7-28.

**Figure 5. Japanese and U.S. Debt-to-Equity Ratios, 1971-89<sup>a</sup>**



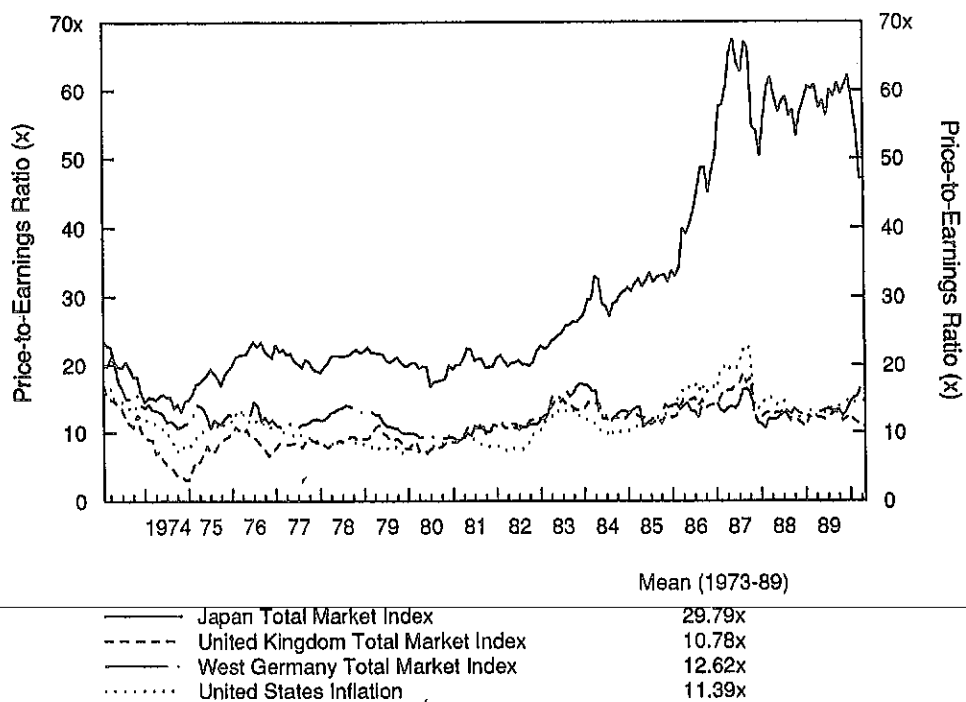
<sup>a</sup> Debt-to-equity ratio defined as book value of debt divided by market value of equity.

As Figure 6 illustrates, Japanese P/E multiples have exceeded those of the United States as well as other major industrial countries since the mid-1970s. Compared with these other countries, the Japanese equity market took off in the early 1980s, further increasing its relative acceleration in the mid-1980s. Having reached peak P/E multiples of over 60 times, Japanese P/E multiples are still significantly higher (mid 40s) than the other major countries (mid teens) despite the Japanese market's sharp decline since the start of 1990.

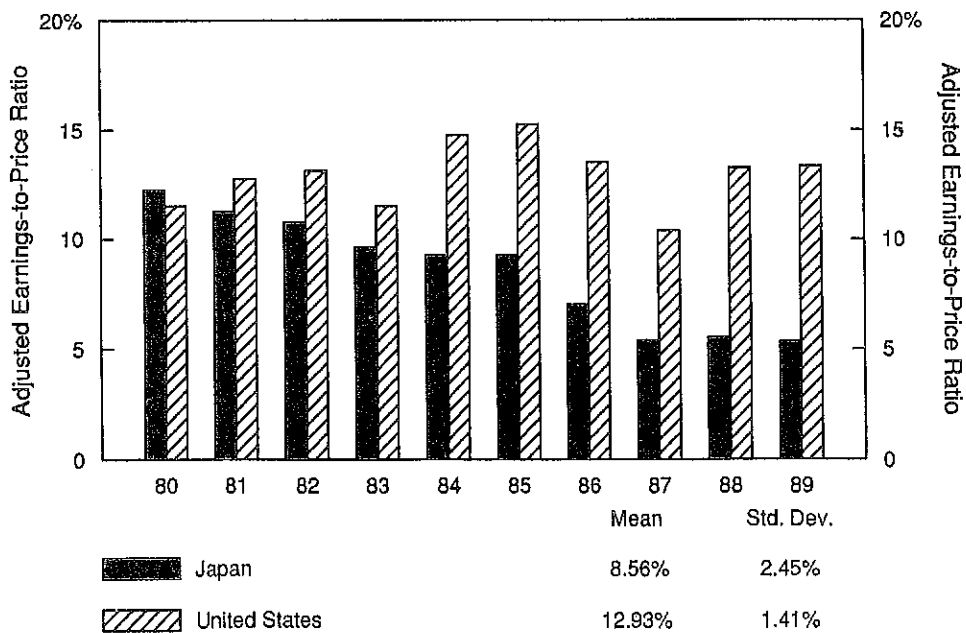
These relatively high P/E ratios suggest that the Japanese equity CoC is significantly lower than that of its major competitors. For example, assuming a zero profit-growth rate, an unadjusted P/E ratio of 60 implies a 1.67% equity CoC while an unadjusted P/E ratio of 12 implies an 8.33% equity CoC — a 6.7% difference. Adjusting for differences in accounting effects, cross-holdings of Japanese shares and real economic growth rates shows that in the 1980s, the Japanese equity CoC had been 4.4% lower than in the United States (see Figure 7). Further adjusting for inflation shows that Japan's equity CoC advantage over the U.S., on average, has been 3.3%. Since the U.S. inflation rate has been 1.1% higher than Japan's (see Figure 4), 4.4%-1.1% = 3.3%.<sup>8</sup>

<sup>8</sup> For a detailed discussion on how these adjustments are made, see *ibid.*, McCauley, R.N. and Zimmer, S.A. In a nutshell, these authors first adjust Japanese and U.S. earnings to eliminate distortions caused by inflation which generates accounting earnings that deviate from true economic earnings. Second, they adjust current earnings to reflect the retained earnings of the customarily excluded cross-held shares. Third, the above authors adjust Japanese and U.S. P/E ratios to account for divergent Japanese and U.S. real economic growth rates. We discuss this in more detail later in the report since we employ a similar method. Finally, we subtract the appropriate inflation rates from the adjusted earnings-to-price ratios to arrive at the real equity CoCs.

**Figure 6. Price-to-Earnings Ratios, Jan 1973-Apr 1990**



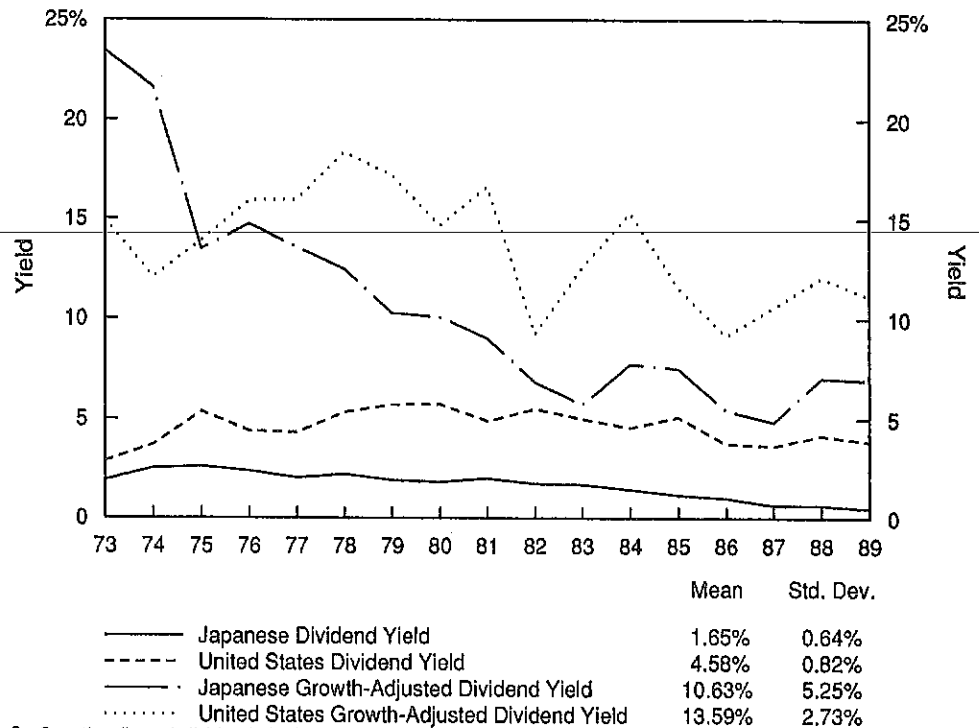
**Figure 7. Japanese and U.S. Cost of Equity: Adjusted Earnings-to-Price Ratios, 1980-89<sup>a</sup>**



<sup>a</sup> Earnings-to-price ratios adjusted for differences in accounting conventions, economic growth rates, and cross-holdings of Japanese shares.

Since 1973, observed Japanese dividend yields on average, have been 2.9% lower than in the United States (see Figure 8). During this time, the Japanese market has been driven primarily by low-dividend paying, high growth stocks.<sup>9</sup> As such, examining unadjusted dividend yields can be as misleading as examining unadjusted earnings-to-price ratios. Adjustments for growth differences widen the comparative dividend yield difference to 3.0% (see Figure 8). After the partially offsetting effects of inflation are taken into account, the difference narrows to 1.9%. Since the U.S. inflation rate has been 1.1% higher than Japan's inflation rate (see Figure 4), 3.0%-1.1% = 1.9%.

**Figure 8. Japanese and U.S. Dividend Yields, 1973-89<sup>a</sup>**



<sup>a</sup> Growth-adjusted dividend yield = dividend yield plus rate of growth of nominal GNP.

The above results indicate that the growth- and inflation-adjusted equity CoC difference between Japan and the United States has not been as high as the nominal difference — a conclusion paralleling our previous results for the debt CoC.

### Modern-Finance Theory and Supporting Evidence

Modern-finance theory states that the cost of equity equals the equilibrium return to equity holders. Unlike the conventional approach, however, modern-finance theory focuses on both observed and expected returns in the securities markets, and ignores accounting-based measurements.

The most prominent modern theory is the capital asset pricing model. The capital asset pricing model states that for a given security:

$$\text{Expected Return} = \text{Risk-Free Rate} + \text{"beta"} \times \text{EMRP}$$

<sup>9</sup> Typically, companies are reluctant to change their dividend payments, even when such a change would accompany increased earnings. However, share prices of companies typically reflect the discounted present values of all expected future dividends, regardless of how far in the future these dividends are expected to materialize. Such a market mechanism suggests that high-growth companies will typically exhibit low dividend yields — particularly in the initial stages of their life cycles.

A given security's beta measures the degree to which the security's price movements follow the overall equity market's price movements.<sup>10</sup> As defined in the first footnote, the EMRP measures the return that equity investors require above the return on riskless investments. The beta and the EMRP typically are estimated using historical data. As is the case with all historical estimates, the user should beware that history may not necessarily repeat itself.

### The Capital Asset Pricing Model's Apparent Conclusion

As shown in Figure 9, the observed Japanese EMRP was approximately 3.4% higher than the observed EMRP in the United States during 1973-89. Recalling that Japanese government bond yields have been lower in both nominal and real terms (see Figure 2), this would imply that the equity CoC has been higher in Japan by 0.8% and 1.9% as measured in nominal and real terms.<sup>11</sup> This sharply contrasts with the implications of conventional accounting-based approaches. How do we reconcile these conclusions?

### Adjusting the Capital Asset Pricing Methodology

To properly compare Japanese and U.S. EMRPs, we need to put the two markets on an equal footing, particularly concerning:

- the relative real economic growth rates; and
- the relative debt-to-equity (D/E) ratios.

As Figure 4 shows, Japanese real economic growth rates, on average, have been 1.4% per year higher than in the United States. Keeping everything else constant, this factor alone implies about 1.4% higher observed equity returns in Japan.<sup>12</sup>

As Figure 5 shows, the Japanese market has had a higher, albeit declining, D/E ratio relative to the U.S. market. Starting at comparatively low levels in the 1970s, the U.S. D/E ratio has steadily crept up to surpass the Japanese in 1989.<sup>13</sup>

<sup>10</sup> For a more detailed discussion, see Peter B. Blanton, Eric B. Lindenberg and Kevin L. Thatcher, *The Financial Executive's Guide to the Cost of Capital*, Salomon Brothers Inc, June 1990.

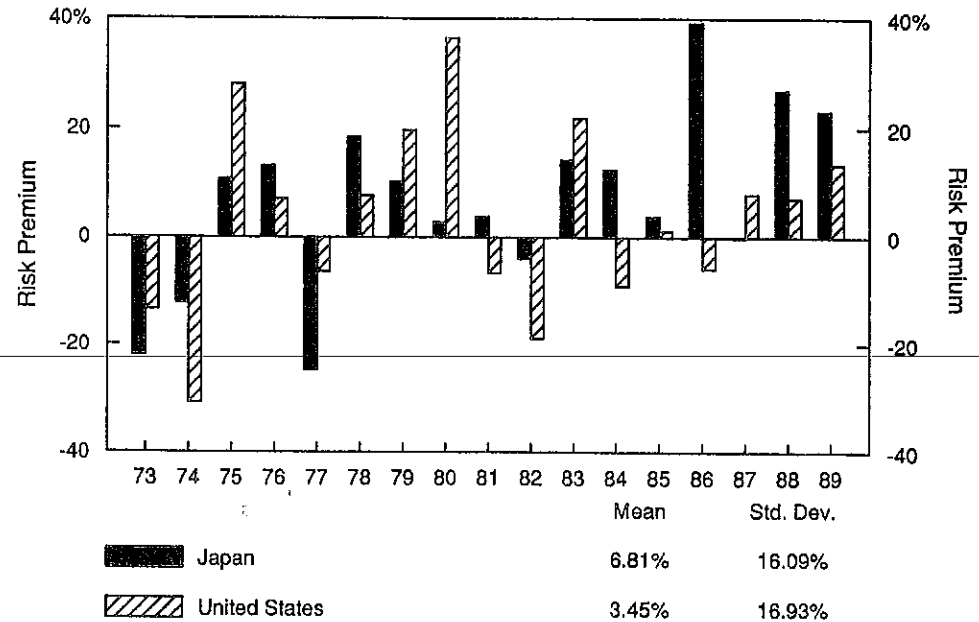
<sup>11</sup> According to the Capital Asset Pricing Model, the overall equity CoC equals the risk-free rate plus the EMRP. As such, the Japanese equity CoC equals  $7.02\% + 6.81\% = 13.83\%$  (nominal), and  $1.45\% + 6.81\% = 8.26\%$  (real). However, the U.S. equity CoC equals  $9.54\% + 3.45\% = 12.99\%$  (nominal), and  $2.87\% + 3.45\% = 6.32\%$  (real). This implies a 0.8% ( $13.83\% - 12.99\%$ ) higher nominal, and a 1.9% ( $8.26\% - 6.32\%$ ) higher real Japanese equity CoC than in the United States.

<sup>12</sup> For a theoretical expose of why this assertion may be true, see Johnson, H.G. *Essays in Monetary Economics*, George Allen and Unwin Ltd., London, 1974. Intuitively, we can conceptualize total stock market returns as the sum of current economic earnings plus a factor capturing the expected growth of these earnings. Assuming that the stock market is a good sample of the economy, and the shares of the factors of production remain constant through time, the stock market should grow at the same rate as the economy. Therefore, it follows that because of the real economic growth difference, the Japanese market should have outperformed the U.S. market by 1.4%, as measured in real terms.

<sup>13</sup> Debt and equity are respectively measured as book and market values. Theoretically, debt should also be measured as market value. Unfortunately, this statistic is not readily available. It is important to note that when a corporation's debt is of short maturity or a blend of high and low coupons, the book and market values of debt do not typically diverge significantly. Also, disregarding embedded debt options, such as callability, and the recent decline in the high-yield market, we assume that the book value of debt is a close enough proxy for its market value. Fortunately, as the regression results (discussed later) indicate, these abstractions do not seem to significantly affect our empirical results.

Even if the Japanese and U.S. markets consisted of identical assets, because of its higher average leverage, the Japanese market would outperform the U.S. market in bull markets, and underperform in bear markets. As a result, in the worldwide bull market of the 1980s, observed Japanese equity risk premiums were probably overstating the longer-run premiums (see Figure 9).

**Figure 9. Japanese and U.S. Equity Market Risk Premiums, 1973-89<sup>a</sup>**



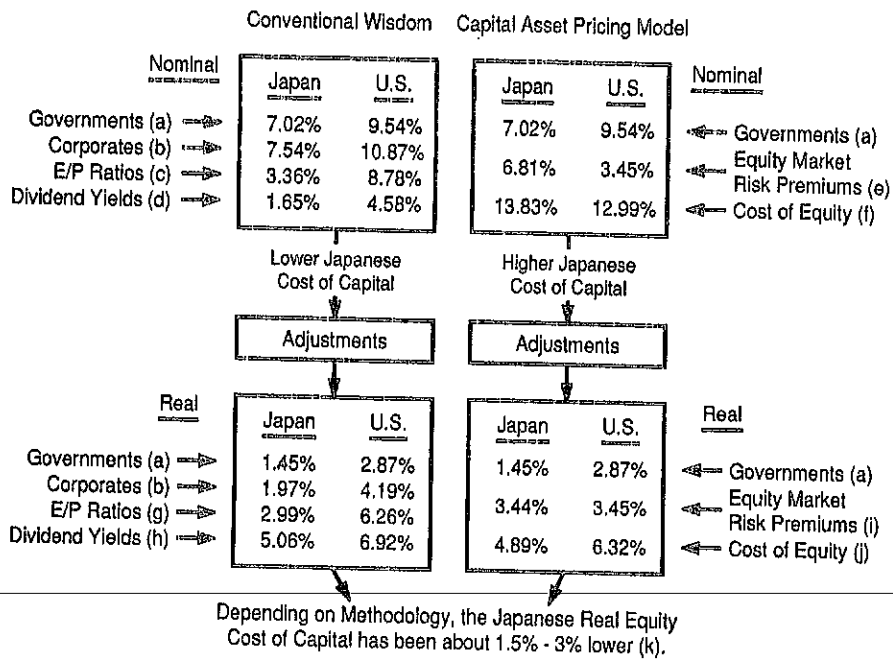
<sup>a</sup> Equity Market Risk Premium = Total Returns on Equities - Total Returns on Long Governments.

Adjusting for both the D/E ratio and real growth differences during the 1973-89 return period, the Japanese EMRP falls from 6.81% to 3.44% — just about equal to that of the United States for the same period.<sup>14</sup>

Lower nominal and real Japanese government yields, coupled with an adjusted Japanese EMRP roughly equal to that of the United States, suggest that the Japanese equity CoC, as determined by modern-finance theory, will be lower than in the United States. This contrasts with what a casual review of historical risk premiums might suggest. In sum, the properly adjusted evidence indicates that the conventional and modern methodologies do not contradict one another after all (see Figure 10 for a summary of the empirical results).

<sup>14</sup> We adjust for the different D/E ratios using two methods. First, we estimate observed (levered) betas for the Japanese and U.S. equity markets with respect to total world-equity-market returns. Using monthly data from 1981-89, we find that the Japanese beta equals 1.1280 while the U.S. beta equals 0.8776 — implying that the average observed Japanese beta has been 29% higher than the U.S. beta. Second, using a formula given in most standard corporate-finance textbooks such as T.E. Copeland, and J.F. Weston, *Financial Theory and Corporate Policy*, Addison-Wesley, New York, 1988, we calculate the ratios of levered-to-unlevered Japanese and U.S. betas. This formula which is a function of corporate marginal tax rates and D/E ratios predicts that the Japanese-observed beta should be higher than the U.S.-observed beta. Armed with such a confirmation, we first reduce the Japanese EMRP by 29% to equalize the two markets for D/E-ratio effects. We then subtract 1.4 percentage points from the Japanese EMRP to equalize the two markets for real-growth effects. This subtraction indicates where this EMRP would have been if Japanese growth equaled that of the United States. A Japanese EMRP adjusted this way is a useful forecasting tool, particularly if one believes that the future performance of the Japanese and U.S. economies will converge.

**Figure 10. Summary of Empirical Results<sup>a-k</sup>**



<sup>a</sup> See Figure 2 <sup>b</sup> See Figure 3 <sup>c</sup> Inverse of P/E ratios (see Figure 6) <sup>d</sup> See Figure 8 <sup>e</sup> See Figure 9  
<sup>f</sup> Governments plus EMRP <sup>g</sup> Adjusted E/P ratios minus inflation (see Figures 4 and 7) <sup>h</sup> Growth adjusted dividend yields minus inflation (see Figures 4 and 8) <sup>i</sup> See Figure 9 and the following text <sup>j</sup> Real governments plus adjusted EMRPs <sup>k</sup> On the left hand side, adjusted E/P ratios imply a difference of approximately 3%. On the right hand side, however, the adjusted Capital Asset Pricing Model implies a difference of approximately 1.5%.

## Other Considerations

The market has perceived Japan to be the lower risk country for a variety of reasons including the following:

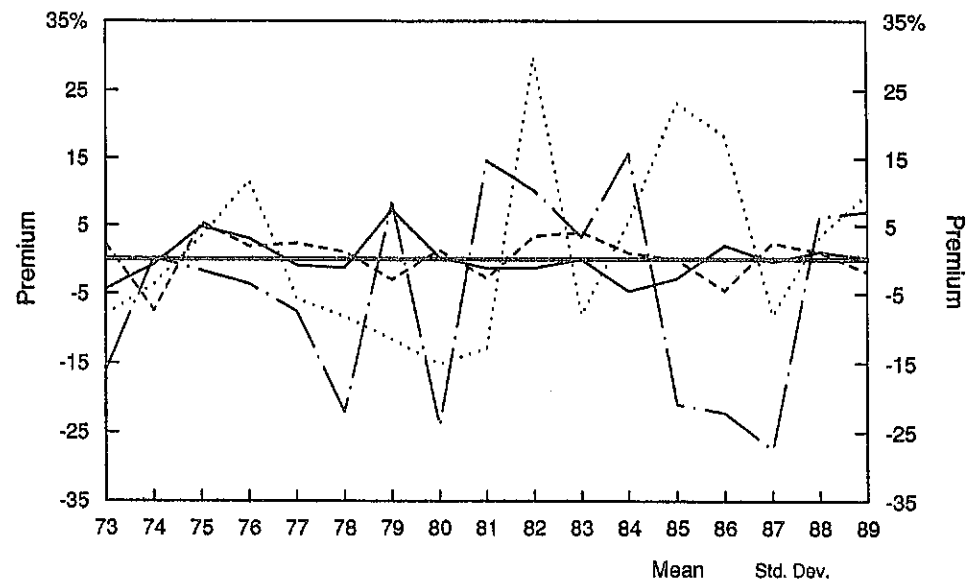
- Japan has had a higher and more stable economic growth rate (see Figure 4);
- Japan has had a lower and less variable average inflation rate (see Figure 4);
- Japanese quality premiums (returns on corporate bonds minus returns on long government bonds — see Figure 11) have been lower and less variable, while Japanese quality spreads (yields on corporates minus yields on governments — see Figures 2 and 3) have been lower;<sup>15</sup> and
- Government maturity premiums (returns on long government bonds minus returns on short government bonds) also have been lower and less variable in Japan (see Figure 11).<sup>16</sup>

<sup>15</sup> According to some theoretical models such as the Arbitrage Pricing Model and recent empirical findings, widening quality premiums indicate great levels of perceived business risk. For more details, see Ibbotson, R.G., Diermeier, J.J. and Siegel, L.B. "The Demand for Capital Market Returns: A New Equilibrium Theory." *Financial Analysts Journal*, January-February 1984, pp. 22-33.

<sup>16</sup> As in the above footnote, widening government maturity premiums are also associated with high levels of business risk.



**Figure 11. Japanese and U.S. Quality and Maturity Premiums, 1973-89<sup>a</sup>**



	Mean	Std. Dev.
Japanese Quality Premium	0.07%	2.95%
United States Quality Premium	0.39%	3.22%
Japanese Maturity Premium	-4.70%	14.24%
United States Maturity Premium	1.37%	12.97%

<sup>a</sup> Quality Premium = Total Return (Corporates - Governments).  
Maturity Premium = Total Return (Long Governments - Short Governments).

Japan's lower perceived business risk is partially the result of the intimate relationship that the Japanese banks and governmental authorities have with Japanese corporations. Additionally, the *keiretsu* corporate structures — interlocking ownership of conglomerates — also contribute to lower business risk.<sup>17</sup>

In sum, we reaffirm that the Japanese debt and equity CoCs have indeed been lower than in the United States. Depending on the methodology, the inflation-adjusted equity CoC has been about 1.5%-3.0% lower in Japan. This has probably been because of the underlying economic factors that have differentiated Japan, not only from the United States, but also from the rest of the world. Going forward, however, if these factors change and Japan becomes a riskier country than it has been — as demonstrated by the market developments of the recent few months — the Japanese and U.S. debt and equity CoCs may well converge. Until that time, corporate issuers of securities may wish to consider the strategies described below to benefit from Japan's CoC advantage.

### Financial Strategies to Benefit from Japan's Cost of Capital Advantage

As shown above, Japan's equity CoC is indeed lower than in the U.S. by about 1.5%-3.0%. Multinational corporations with significant Japanese operations are therefore well-advised to consider financing strategies that take advantage of this equity CoC advantage. Below are two specific alternatives.

#### Equity Carve-Outs

In an equity carve-out, a parent company sells a portion of a wholly owned subsidiary's common shares through an initial public offering. Significant evidence suggests that equity carve-outs create substantial shareholder value by improving productivity and providing management incentives at the subsidiary level. Additionally, a carve-out enhances investors' value

<sup>17</sup> See Frankel, J. "Japanese Finance: A Survey," National Bureau of Economic Research, October 1989.

perceptions by uncovering the favorable economic prospects of a subsidiary previously overshadowed by the parent.<sup>18</sup>

When a U.S. corporation has a major Japanese operation, the case for carve-outs can be even stronger. Japanese investors may be willing to offer favorable equity financing, not only because of the lower fundamental equity cost, but also because certain kinds of businesses may be valued more highly in Japan than in the United States. Name brands and other business operations that are not easily accessible in the Japanese financial markets may be particularly attractive and command favorable multiples.

For example, in 1986 the Shaklee Corporation, a California-based health food and vitamins concern, carved out the shares of its Japanese subsidiary, Shaklee Japan K.K., at a 59 P/E multiple, while its own stock was trading at a 22 P/E ratio. Shaklee's (U.S.) stock price rose from \$20.50 (two months before the offering) to \$26.875 immediately after the offering. Avon Products, Baskin Robins International and Hughes Aircrafts all followed with carve-outs of their Japanese subsidiaries at P/E multiples of 43, 38 and 87, respectively.

### Convertibles

A Japanese parent operating a U.S. subsidiary may desire to establish a stronger U.S. presence by tapping the U.S. equity or even debt markets.

Although financing in the United States may have CoC disadvantages, such a move enables the parent to:

- diversify its investor base;
- enhance investor perceptions by channeling equity analysts' attention to the subsidiary's prospects which might otherwise have been overlooked;
- improve subsidiary management by allowing decentralized decision-making and offering subsidiary managers incentives such as stock option plans; and
- better enable the parent to present itself as a member of the U.S. economic community.

These moves are remarkably similar to those governing equity carve-outs. The problem here, however, is that because the U.S. CoC seems to be higher than Japan's, the Japanese parent may be reluctant to issue debt or equity in the United States.

Two variations of a hybrid security that may overcome these concerns are:

- a U.S. subsidiary bond convertible into the equity (or equivalent value) of the Japanese parent; and
- a U.S. subsidiary preferred stock convertible into the equity (or equivalent value) of the Japanese parent.

Each of these could achieve the parent's economic, political and managerial objectives while also minimizing the U.S. subsidiary's equity CoC disadvantage.

<sup>18</sup> For a more thorough discussion of equity carve-outs, see *The Case for Carve-Outs: The Issuer's guide to Creating Value through an Equity Carve-Out*, by Eric B. Lindenberg, Peter B. Blanton, Niso Abuaf, and Kevin L. Thatcher, Salomon Brothers Inc, October 1989.

Because of Japanese corporate law, such convertibles would have to be cash settled. These types of securities have been offered in the past. In 1989, for example, Newscorp, an Australian-Cayman Islands subsidiary of the English corporation Reuters, issued US\$14 million of preferred shares exchangeable for the cash equivalent of 1.0204 Reuter ADSs. Similarly, in 1989, Millicom — a United Kingdom-based diversified international company — offered US\$60 million principal amount of Subordinated Exchangeable Debentures exchangeable for Racal shares or Racal ADRs, subject to Millicom's right to pay in U.S. dollars.

A convertible security of the U.S. subsidiary, exchangeable into the shares of the Japanese parent, allows the parent to sell U.S. securities whose pricing partially reflects higher Japanese P/E multiples and the higher implied Japanese warrant volatilities. This reduces the subsidiary's U.S. CoC disadvantage relative to straight U.S.-based financing alternatives.

---

### Conclusion

---

In this paper, we have analyzed two apparently contradictory sets of evidence concerning the relative costs of capital in Japan and the United States; we found that capital costs indeed, have been lower in Japan.

International capital mobility notwithstanding, Japan will likely remain the lower cost country in the near future. Though the reasons for this are not entirely self-evident, Japanese macroeconomic stability in real growth, in inflation rates and in interest rates seems to be key. The close relationship among the Japanese government, corporations and banks and the notoriously high Japanese savings rate are additional contributors which are not likely to change in the near future. In the long-term, however, capital flows will likely erase the capital cost differences. As barriers to entry fall, and as Japanese consumption patterns more fully reflect Japanese income gains, we expect that the Japanese CoC advantage will be reduced. Thus, multinational companies should quickly take advantage of the existing situation.

For now, to benefit from such a CoC advantage, we believe that multinationals may wish to consider a carve-out of their Japanese subsidiaries. In situations where a multinational wants to achieve a public U.S. market presence, an appropriate financing strategy could employ U.S. convertible securities exchangeable (but cash-settled) into the shares (ADRs, ADSs) of the Japanese parent.

\* \* \* \* \*

---

© Salomon Brothers Inc 1990

Although the information in this report has been obtained from sources which Salomon Brothers Inc believes to be reliable, we do not guarantee its accuracy, and such information may be incomplete or condensed. All opinions and estimates included in this report constitute our judgment as of this date and are subject to change without notice. This report is for information purposes only and is not intended as an offer or solicitation with respect to the purchase or sale of any security.

---

## Salomon Brothers

### **Salomon Brothers Inc**

New York (212) 747-7000  
Atlanta (404) 827-7600  
Boston (617) 357-6200  
Chicago (312) 876-8700  
Dallas (214) 880-7300  
Los Angeles (213) 253-2200  
San Francisco (415) 951-1777

### **Frankfurt**

Salomon Brothers AG  
0-69-2607-0

### **Hong Kong**

Salomon Brothers Hong Kong Limited  
852-5-841-8000

### **London**

Salomon Brothers International Limited  
Salomon Brothers U.K. Limited  
Salomon Brothers U.K. Equity Limited  
44-71-721-2000

### **Sydney**

Salomon Brothers Australia Limited  
61-2-232-4455

### **Taipei**

Salomon Brothers Taiwan Limited  
886-2-719-6647

### **Tokyo**

Salomon Brothers Asia Limited  
81-3-589-9111

### **Toronto**

Salomon Brothers Canada Inc  
(416) 866-2300

### **Zurich**

Salomon Brothers Inc  
41-1-366-4111

### **Representative Offices**

**East Berlin** 49-161-2610935  
**Madrid** 34-1-410-3000  
**Melbourne** 61-3-670-7555  
**Seoul** 82-2-358-0587  
**Singapore** 65-250-6088

**First Class Mail**  
US Postage  
**Paid**  
New York, NY  
Permit No 8155