



17: Multinational Cost of Capital and Capital Structure

An MNC finances its operations by using a capital structure (proportion of debt versus equity financing) that can minimize its cost of capital. By minimizing the cost of capital used to finance a given level of operations, financial managers minimize the required rate of return necessary to make the foreign operations feasible and therefore maximize the value of those operations.

The specific objectives of this chapter are to:

- explain how corporate and country characteristics influence an MNC's cost of capital,
- explain why there are differences in the costs of capital among countries, and
- explain how corporate and country characteristics are considered by an MNC when it establishes its capital structure.

Background on Cost of Capital

A firm's capital consists of equity (retained earnings and funds obtained by issuing stock) and debt (borrowed funds). The firm's cost of retained earnings reflects an opportunity cost: what the existing shareholders could have earned if they had received the earnings as dividends and invested the funds themselves. The firm's cost of new common equity (issuing new stock) also reflects an opportunity cost: what the new shareholders could have earned if they had invested their funds elsewhere instead of in the stock. This cost exceeds that of retained earnings because it also includes the expenses associated with selling the new stock (flotation costs).

The firm's cost of debt is easier to measure because the firm incurs interest expenses as a result of borrowing funds. Firms attempt to use a specific capital structure, or mix of capital components, that will minimize their cost of capital. The lower a firm's cost of capital, the lower is its required rate of return on a given proposed project. Firms estimate their cost of capital before they conduct capital budgeting because the net present value of any project is partially dependent on the cost of capital.

Comparing the Costs of Equity and Debt

A firm's weighted average cost of capital (referred to as k_c) can be measured as

$$k_c = \left(\frac{D}{D + E} \right) k_d (1 - t) + \left(\frac{E}{D + E} \right) k_e$$

where

- D = amount of the firm's debt
- k_d = before-tax cost of its debt
- t = corporate tax rate
- E = firm's equity
- k_e = cost of financing with equity

These ratios reflect the percentage of capital represented by debt and equity, respectively.

There is an advantage to using debt rather than equity as capital because the interest payments on debt are tax deductible. The greater the use of debt, however, the greater the interest expense and the higher the probability that the firm will be unable to meet its expenses. Consequently, the rate of return required by potential new shareholders or creditors will increase to reflect the higher probability of bankruptcy.

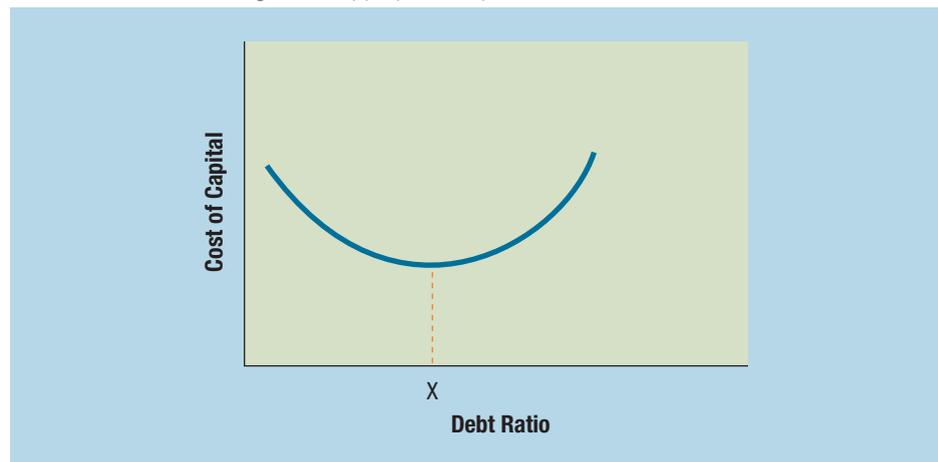
The tradeoff between debt's advantage (tax deductibility of interest payments) and its disadvantage (increased probability of bankruptcy) is illustrated in Exhibit 17.1. As the exhibit shows, the firm's cost of capital initially decreases as the ratio of debt to total capital increases. However, after some point (labeled X in Exhibit 17.1), the cost of capital rises as the ratio of debt to total capital increases. This suggests that the firm should increase its use of debt financing until the point at which the bankruptcy probability becomes large enough to offset the tax advantage of using debt. To go beyond that point would increase the firm's overall cost of capital.

Cost of Capital for MNCs

The cost of capital for MNCs may differ from that for domestic firms because of the following characteristics that differentiate MNCs from domestic firms:

- *Size of firm.* An MNC that often borrows substantial amounts may receive preferential treatment from creditors, thereby reducing its cost of capital. Furthermore, its relatively large issues of stocks or bonds allow for reduced flotation costs (as a percentage of the amount of financing). Note, however, that these advantages are due to the MNC's size and not to its internationalized business. A domestic corporation may receive the same treatment if it is large enough. Nevertheless, a firm's growth is more restricted if it is not willing to operate internationally. Because MNCs may more easily achieve growth, they may be more able than purely domestic firms to reach the necessary size to receive preferential treatment from creditors.
- *Access to international capital markets.* MNCs are normally able to obtain funds through the international capital markets. Since the cost of funds can vary among markets, the MNC's access to the international capital markets may allow it to obtain funds at a lower cost than that paid by domestic firms. In addition,

Exhibit 17.1 Searching for the Appropriate Capital Structure



subsidiaries may be able to obtain funds locally at a lower cost than that available to the parent if the prevailing interest rates in the host country are relatively low.

EXAMPLE

The Coca-Cola Co.'s recent annual report stated: "Our global presence and strong capital position afford us easy access to key financial markets around the world, enabling us to raise funds with a low effective cost. This posture, coupled with the aggressive management of our mix of short-term and long-term debt, results in a lower overall cost of borrowing." ■

The use of foreign funds will not necessarily increase the MNC's exposure to exchange rate risk since the revenues generated by the subsidiary will most likely be denominated in the same currency. In this case, the subsidiary is not relying on the parent for financing, although some centralized managerial support from the parent will most likely still exist.

- *International diversification.* As explained earlier, a firm's cost of capital is affected by the probability that it will go bankrupt. If a firm's cash inflows come from sources all over the world, those cash inflows may be more stable because the firm's total sales will not be highly influenced by a single economy. To the extent that individual economies are independent of each other, net cash flows from a portfolio of subsidiaries should exhibit less variability, which may reduce the probability of bankruptcy and therefore reduce the cost of capital.
- *Exposure to exchange rate risk.* An MNC's cash flows could be more volatile than those of a domestic firm in the same industry if it is highly exposed to exchange rate risk. If foreign earnings are remitted to the U.S. parent of an MNC, they will not be worth as much when the U.S. dollar is strong against major currencies. Thus, the capability of making interest payments on outstanding debt is reduced, and the probability of bankruptcy is higher. This could force creditors and shareholders to require a higher return, which increases the MNC's cost of capital.

Overall, a firm more exposed to exchange rate fluctuations will usually have a wider (more dispersed) distribution of possible cash flows in future periods. Since the cost of capital should reflect that possibility, and since the possibility of bankruptcy will be higher if the cash flow expectations are more uncertain, exposure to exchange rate fluctuations could lead to a higher cost of capital.

- *Exposure to country risk.* An MNC that establishes foreign subsidiaries is subject to the possibility that a host country government may seize a subsidiary's assets. The probability of such an occurrence is influenced by many factors, including the attitude of the host country government and the industry of concern. If assets are seized and fair compensation is not provided, the probability of the MNC's going bankrupt increases. The higher the percentage of an MNC's assets invested in foreign countries and the higher the overall country risk of operating in these countries, the higher will be the MNC's probability of bankruptcy (and therefore its cost of capital), other things being equal.

Other forms of country risk, such as changes in a host government's tax laws, could also affect an MNC's subsidiary's cash flows. These risks are not necessarily incorporated into the cash flow projections because there is no reason to believe that they will arise. Nevertheless, there is a possibility that these events will occur, so the capital budgeting process should incorporate such risk.

EXAMPLE

ExxonMobil has much experience in assessing the feasibility of potential projects in foreign countries. If it detects a radical change in government or tax policy, it adds a premium to the required return of related projects. The adjustment also reflects a possible increase in its cost of capital. ■

HTTP://

<http://www.pwcglobal.com>
Access to country-specific information such as general business rules and regulations, tax environments, and other useful statistics and surveys.

The five factors that distinguish the cost of capital for an MNC and the cost for a domestic firm in a particular industry are summarized in Exhibit 17.2. In general, the first three factors listed (size, access to international capital markets, and international diversification) have a favorable effect on an MNC's cost of capital, while exchange rate risk and country risk have an unfavorable effect. It is impossible to generalize as to whether MNCs have an overall cost-of-capital advantage over domestic firms. Each MNC should be assessed separately to determine whether the net effects of its international operations on the cost of capital are favorable.

Cost-of-Equity Comparison Using the CAPM

To assess how required rates of return of MNCs differ from those of purely domestic firms, the capital asset pricing model (CAPM) can be applied. It defines the required return (k_e) on a stock as

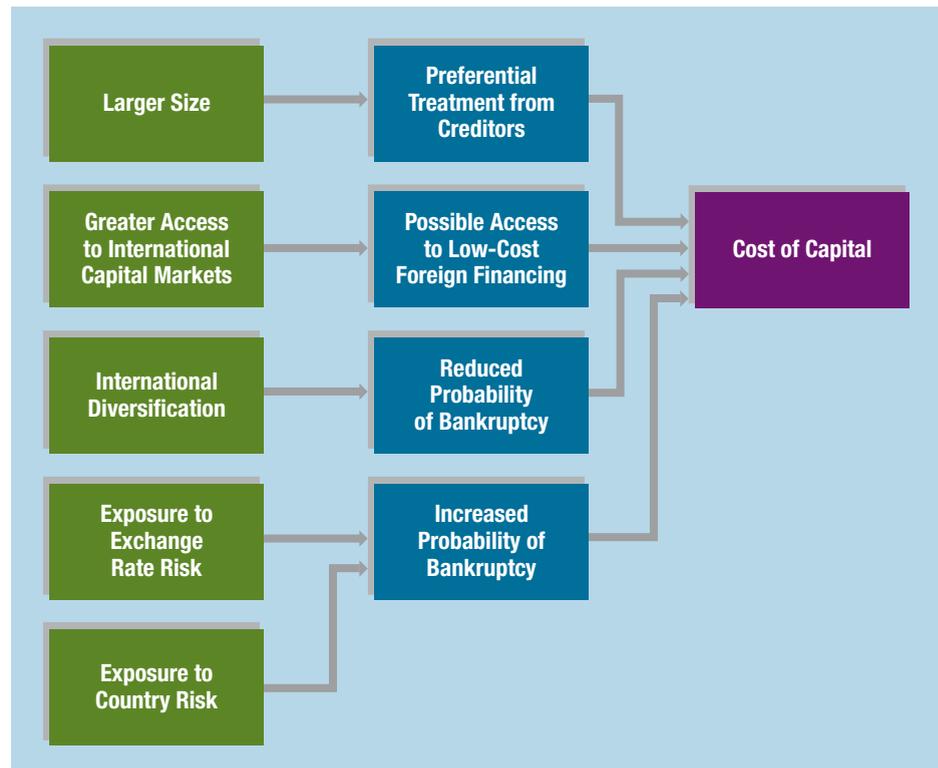
$$k_e = R_f + B(R_m - R_f)$$

where

$$\begin{aligned} R_f &= \text{risk-free rate of return} \\ R_m &= \text{market return} \\ B &= \text{beta of stock} \end{aligned}$$

The CAPM suggests that the required return on a firm's stock is a positive function of (1) the risk-free rate of interest, (2) the market rate of return, and (3) the stock's beta. The beta represents the sensitivity of the stock's returns to market returns (a stock index is normally used as a proxy for the market). Advocates of the

Exhibit 17.2 Summary of Factors That Cause the Cost of Capital of MNCs to Differ from That of Domestic Firms



CAPM may suggest that a project's beta can be used to determine the required rate of return for that project. A project's beta represents the sensitivity of the project's cash flow to market conditions. A project whose cash flow is insulated from market conditions will exhibit a low beta.

For a well-diversified firm with cash flows generated by several projects, each project contains two types of risk: (1) unsystematic variability in cash flows unique to the firm and (2) systematic risk. Capital asset pricing theory suggests that the unsystematic risk of projects can be ignored because it will be diversified away. However, systematic risk is not diversified away because all projects are similarly affected. The lower a project's beta, the lower is the project's systematic risk and the lower its required rate of return.

Implications of the CAPM for an MNC's Risk

An MNC that increases the amount of its foreign sales may be able to reduce its stock's beta and therefore reduce the return required by investors. In this way, it will reduce its cost of capital. If projects of MNCs exhibit lower betas than projects of purely domestic firms, then the required rates of return on the MNCs' projects should be lower. This translates into a lower overall cost of capital.

Capital asset pricing theory would most likely suggest that the cost of capital is generally lower for MNCs than for domestic firms for the reasons just presented. It should be emphasized, though, that some MNCs consider unsystematic project risk to be relevant. And if it is also considered within the assessment of a project's risk, the required rate of return will not necessarily be lower for MNCs' projects than for projects of domestic firms. In fact, many MNCs would perceive a large project in a less developed country with very volatile economic conditions and a high degree of country risk as being very risky, even if the project's expected cash flows are uncorrelated with the U.S. market. This indicates that MNCs may consider unsystematic risk to be an important factor when determining a foreign project's required rate of return.

When assuming that financial markets are segmented, it is acceptable to use the U.S. market when measuring a U.S.-based MNC's project beta. If U.S. investors invest mostly in the United States, their investments are systematically affected by the U.S. market. MNCs that adopt projects with low betas may be able to reduce their own betas (the sensitivity of their stock returns to market returns). U.S. investors consider such firms desirable because they offer more diversification benefits due to their low betas.

Since markets are becoming more integrated over time, one could argue that a world market is more appropriate than a U.S. market for determining the betas of U.S.-based MNCs. That is, if investors purchase stocks across many countries, their stocks will be substantially affected by world market conditions, not just U.S. market conditions. Consequently, to achieve more diversification benefits, they will prefer to invest in firms that have low sensitivity to world market conditions. When MNCs adopt projects that are isolated from world market conditions, they may be able to reduce their overall sensitivity to these conditions and therefore could be viewed as desirable investments by investors.

Though markets are becoming more integrated, U.S. investors still tend to focus on U.S. stocks and to capitalize on lower transaction and information costs. Thus, their investments are systematically affected by U.S. market conditions; this causes them to be most concerned about the sensitivity of investments to the U.S. market.

In summary, we cannot say with certainty whether an MNC will have a lower cost of capital than a purely domestic firm in the same industry. However, we can use this discussion to understand how an MNC can take full advantage of the favorable aspects that reduce its cost of capital, while minimizing exposure to the unfavorable aspects that increase its cost of capital.

Costs of Capital across Countries

An understanding of why the cost of capital can vary among countries is relevant for three reasons. First, it can explain why MNCs based in some countries may have a competitive advantage over others. Just as technology and resources differ across countries, so does the cost of capital. MNCs based in some countries will have a larger set of feasible (positive net present value) projects because their cost of capital is lower; thus, these MNCs can more easily increase their world market share. MNCs operating in countries with a high cost of capital will be forced to decline projects that might be feasible for MNCs operating in countries with a low cost of capital.

Second, MNCs may be able to adjust their international operations and sources of funds to capitalize on differences in the cost of capital among countries. Third, differences in the costs of each capital component (debt and equity) can help explain why MNCs based in some countries tend to use a more debt-intensive capital structure than MNCs based elsewhere. Country differences in the cost of debt are discussed next, followed by country differences in the cost of equity.

Country Differences in the Cost of Debt

The cost of debt to a firm is primarily determined by the prevailing risk-free interest rate in the currency borrowed and the risk premium required by creditors. The cost of debt for firms is higher in some countries than in others because the corresponding risk-free rate is higher at a specific point in time or because the risk premium is higher. Explanations for country differences in the risk-free rate and in the risk premium follow.

Differences in the Risk-Free Rate. The risk-free rate is determined by the interaction of the supply of and demand for funds. Any factors that influence the supply and/or demand will affect the risk-free rate. These factors include tax laws, demographics, monetary policies, and economic conditions, all of which differ among countries.

Tax laws in some countries offer more incentives to save than those in others, which can influence the supply of savings and, therefore, interest rates. A country's corporate tax laws related to depreciation and investment tax credits can also affect interest rates through their influence on the corporate demand for funds.

A country's demographics influence the supply of savings available and the amount of loanable funds demanded. Since demographics differ among countries, so will supply and demand conditions and, therefore, nominal interest rates. Countries with younger populations are likely to experience higher interest rates because younger households tend to save less and borrow more.

The monetary policy implemented by a country's central bank influences the supply of loanable funds and therefore influences interest rates. Each central bank implements its own monetary policy, and this can cause interest rates to differ among countries. One exception is the set of European countries that rely on the European Central Bank to control the supply of euros. All of these countries now have the same risk-free rate because they use the same currency.

Since economic conditions influence interest rates, they can cause interest rates to vary across countries. The cost of debt is much higher in many less developed countries than in industrialized countries, primarily because of economic conditions. Countries such as Brazil and Russia commonly have a high risk-free interest rate, which is partially attributed to high inflation. Investors in these countries will invest in a firm's debt securities only if they are compensated beyond the degree to which prices of products are expected to increase.

HTTP://

<http://www.bloomberg.com>
Latest information from
financial markets around
the world.

Differences in the Risk Premium. The risk premium on debt must be large enough to compensate creditors for the risk that the borrower may be unable to meet its payment obligations. This risk can vary among countries because of differences in economic conditions, relationships between corporations and creditors, government intervention, and degree of financial leverage.

HTTP://

<http://www.morganstanley.com/views/gef/index.html>
Analyses, discussions, statistics, and forecasts related to non-U.S. economies.

When a country's economic conditions tend to be stable, the risk of a recession in that country is relatively low. Thus, the probability that a firm might not meet its obligations is lower, allowing for a lower risk premium.

Corporations and creditors have closer relationships in some countries than in others. In Japan, creditors stand ready to extend credit in the event of a corporation's financial distress, which reduces the risk of illiquidity. The cost of a Japanese firm's financial problems may be shared in various ways by the firm's management, business customers, and consumers. Since the financial problems are not borne entirely by creditors, all parties involved have more incentive to see that the problems are resolved. Thus, there is less likelihood (for a given level of debt) that Japanese firms will go bankrupt, allowing for a lower risk premium on the debt of Japanese firms.

Governments in some countries are more willing to intervene and rescue failing firms. For example, in the United Kingdom many firms are partially owned by the government. It may be in the government's best interest to rescue firms that it partially owns. Even if the government is not a partial owner, it may provide direct subsidies or extend loans to failing firms. In the United States, government rescues are less likely because taxpayers prefer not to bear the cost of corporate mismanagement. Although the government has intervened occasionally in the United States to protect particular industries, the probability that a failing firm will be rescued by the government is lower there than in other countries. Therefore, the risk premium on a given level of debt may be higher for U.S. firms than for firms of other countries.

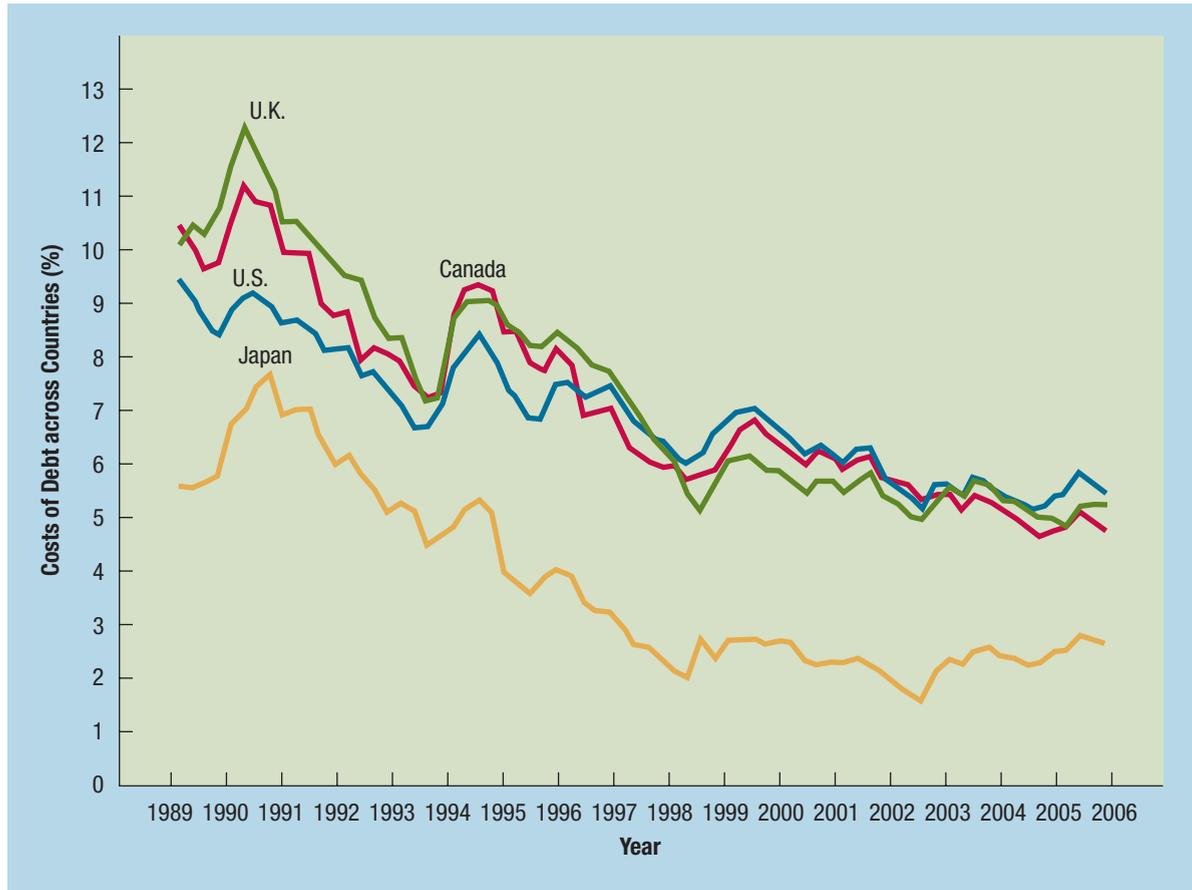
Firms in some countries have greater borrowing capacity because their creditors are willing to tolerate a higher degree of financial leverage. For example, firms in Japan and Germany have a higher degree of financial leverage than firms in the United States. If all other factors were equal, these high-leverage firms would have to pay a higher risk premium. However, all other factors are not equal. In fact, these firms are allowed to use a higher degree of financial leverage because of their unique relationships with the creditors and governments.

Comparative Costs of Debt across Countries. The before-tax cost of debt (as measured by high-rated corporate bond yields) for various countries is displayed in Exhibit 17.3. There is some positive correlation between country cost-of-debt levels over time. Notice how interest rates in various countries tend to move in the same direction. However, some rates change to a greater degree than others. The disparity in the cost of debt among the countries is due primarily to the disparity in their risk-free interest rates.

Country Differences in the Cost of Equity

A firm's cost of equity represents an opportunity cost: what shareholders could earn on investments with similar risk if the equity funds were distributed to them. This return on equity can be measured as a risk-free interest rate that could have been earned by shareholders, plus a premium to reflect the risk of the firm. As risk-free interest rates vary among countries, so does the cost of equity.

The cost of equity is also based on investment opportunities in the country of concern. In a country with many investment opportunities, potential returns may be relatively high, resulting in a high opportunity cost of funds and, therefore, a high cost of equity. According to McCauley and Zimmer, a firm's cost of equity in a partic-

Exhibit 17.3 Costs of Debt across Countries

Source: Federal Reserve.

ular country can be estimated by first applying the price-earnings multiple to a given stream of earnings.¹

The price-earnings multiple is related to the cost of capital because it reflects the share price of the firm in proportion to the firm's performance (as measured by earnings). A high price-earnings multiple implies that the firm receives a high price when selling new stock for a given level of earnings, which means that the cost of equity financing is low. The price-earnings multiple must be adjusted for the effects of a country's inflation, earnings growth, and other factors, however.

Impact of the Euro. The adoption of the euro has facilitated the integration of European stock markets because investors from each country are more willing to invest in other countries where the euro is used as the currency. As demand for shares by investors has increased, trading volume has increased, making the European stock markets more liquid. Investors in one euro zone country no longer need to be concerned about exchange rate risk when they buy stock of a firm based in another euro zone country. In addition, the euro allows the valuations of firms to be more transparent because firms throughout the euro zone can be more easily compared since their values are all denominated in the same currency. Given the increased willingness

¹ Robert N. McCauley and Steven A. Zimmer, "Explaining International Differences in the Cost of Capital," *FRBNY Quarterly Review* (Summer 1989): 7-28.

of European investors to invest in stocks, MNCs based in Europe may obtain equity financing at a lower cost.

Combining the Costs of Debt and Equity

The costs of debt and equity can be combined to derive an overall cost of capital. The relative proportions of debt and equity used by firms in each country must be applied as weights to reasonably estimate this cost of capital. Given the differences in the costs of debt and equity across countries, it is understandable that the cost of capital may be lower for firms based in specific countries. Japan, for example, commonly has a relatively low cost of capital. It usually has a relatively low risk-free interest rate, which not only affects the cost of debt but also indirectly affects the cost of equity. In addition, the price-earnings multiples of Japanese firms are usually high, allowing these firms to obtain equity funding at a relatively low cost. MNCs can attempt to access capital from countries where capital costs are low, but when the capital is used to support operations in other countries, the cost of using that capital is exposed to exchange rate risk. Thus, the cost of capital may ultimately turn out to be higher than expected.

Estimating the Cost of Debt and Equity

When financing new projects, MNCs estimate their cost of debt and equity from various sources. They consider these estimates when they decide on the capital structure to use for financing the projects.

The after-tax cost of debt can be estimated with reasonable accuracy using public information on the present costs of debt (bond yields) incurred by other firms whose risk level is similar to that of the project. The cost of equity is an opportunity cost: what investors could earn on alternative equity investments with similar risk. The MNC can attempt to measure the expected return on a set of stocks that exhibit the same risk as its project. This expected return can serve as the cost of equity. The required rate of return on the project will be the project's weighted cost of capital, based on the estimates as explained here.

EXAMPLE

Lexon Co., a successful U.S.-based MNC, is considering how to obtain funding for a project in Argentina during the next year. It considers the following information:

- U.S. risk-free rate = 6%.
- Argentine risk-free rate = 10%.
- Risk premium on dollar-denominated debt provided by U.S. creditors = 3%.
- Risk premium on Argentine peso-denominated debt provided by Argentine creditors = 5%.
- Beta of project (expected sensitivity of project returns to U.S. investors in response to the U.S. market) = 1.5.
- Expected U.S. market return = 14%.
- U.S. corporate tax rate = 30%.
- Argentine corporate tax rate = 30%.
- Creditors will likely allow no more than 50 percent of the financing to be in the form of debt, which implies that equity must provide at least half of the financing.

Lexon's Cost of Each Component of Capital

$$\text{Cost of dollar-denominated debt} = (6\% + 3\%) \times (1 - .3) = 6.3\%$$

$$\text{Cost of Argentine peso-denominated debt} = (10\% + 5\%) \times (1 - .3) = 10.5\%$$

$$\text{Cost of dollar-denominated equity} = 6\% + 1.5(14\% - 6\%) = 18\%$$

Notice that Lexon's cheapest source of funds is dollar-denominated debt. However, creditors have imposed restrictions on the total amount of debt funding that Lexon can obtain.

Lexon considers four different capital structures for this new project, as shown in Exhibit 17.4. Its weighted average cost of capital (WACC) for this project can be derived by summing the products of the weight times the cost for each component of capital. The weight assigned to each component is the proportion of total funds obtained from that component.

The exhibit shows that lowest estimate of the WACC results from a capital structure of 50 percent U.S. debt and 50 percent equity. Although it is useful to estimate the costs of possible capital structures as shown here, the estimated WACC does not account for the exposure to exchange rate risk. Thus, Lexon will not necessarily choose the capital structure with the lowest estimated WACC. Lexon can attempt to incorporate the exchange rate effects in various ways, as explained in the following section. ■

Using the Cost of Capital for Assessing Foreign Projects

When an MNC's parent proposes an investment in a foreign project that has the same risk as the MNC itself, it can use its weighted average cost of capital as the required rate of return for the project. However, many foreign projects exhibit different risk levels than the risk of the MNC. There are various ways for an MNC to account for the risk differential in its capital budgeting process.

Derive Net Present Values Based on the Weighted Average Cost of Capital

EXAMPLE

Recall that Lexon estimated that its WACC will be 12.15 percent if it uses 50 percent dollar-denominated debt and 50 percent equity. It considers assessing the project in Argentina based on a required rate of return of 12.15 percent. Yet, by financing the Argentine project completely with dollars, Lexon will likely be highly exposed to exchange rate movements. It can attempt to account for how expected exchange rate movements will affect its cash flows when it conducts its capital budgeting analysis. ■

Furthermore, Lexon could account for the risk within its cash flow estimates. Many possible values for each input variable (such as demand, price, labor cost, etc.) can be incorporated to estimate net present values (*NPVs*) under alternative scenarios and then derive a probability distribution of the *NPVs*. When the WACC is used as the required rate of return, the probability distribution of *NPVs* can be assessed to determine the probability that the foreign project will generate a return that is at least

Exhibit 17.4 Lexon's Estimated Weighted Average Cost of Capital (WACC) for Financing a Project

Possible Capital Structure	U.S. Debt (Cost = 6.3%)	Argentine Debt (Cost = 10.5%)	Equity (Cost = 18%)	Estimated WACC
30% U.S. debt, 70% U.S. equity	$30\% \times 6.3\% = 1.89\%$		$70\% \times 18\% = 12.6\%$	14.49%
50% U.S. debt, 50% U.S. equity	$50\% \times 6.3\% = 3.15\%$		$50\% \times 18\% = 9\%$	12.15%
20% U.S. debt, 30% Argentine debt, 50% U.S. equity	$20\% \times 6.3\% = 1.26\%$	$30\% \times 10.5\% = 3.15\%$	$50\% \times 18\% = 9\%$	13.41%
50% Argentine debt, 50% U.S. equity		$50\% \times 10.5\% = 5.25\%$	$50\% \times 18\% = 9\%$	14.25%

equal to the firm's WACC. If the probability distribution contains some possible negative *NPVs*, this suggests that the project could backfire.

This method is useful in accounting for risk because it explicitly incorporates the various possible scenarios in the *NPV* estimation and therefore can measure the probability that a project may backfire. Computer software programs that perform sensitivity analysis and simulation can be used to facilitate the process.

Adjust the Weighted Average Cost of Capital for the Risk Differential

An alternative method of accounting for a foreign project's risk is to adjust the firm's weighted average cost of capital for the risk differential. For example, if the foreign project is thought to exhibit more risk than the MNC exhibits, a premium can be added to the WACC to derive the required rate of return on the project. Then, the capital budgeting process will incorporate this required rate of return as the discount rate. If the foreign project exhibits lower risk, the MNC will use a required rate of return on the project that is less than its WACC.

EXAMPLE

Lexon estimated that its WACC will be 12.15 percent if it uses the capital structure of 50 percent dollar-denominated debt and 50 percent equity. But it recognizes that its Argentine project will be exposed to exchange rate risk and that this project is exposed to more risk than its normal operations. Lexon considers adding a risk premium of 6 percentage points to the estimated WACC to derive the required rate of return. In this case, the required rate of return would be $12.15\% + 6\% = 18.15\%$. ■

The usefulness of this method is limited because the risk premium is arbitrarily determined and is subject to error. The risk premium is dependent on the manager who conducts the analysis. Thus, the decision to accept or reject the foreign project, which is based on the estimated *NPV* of the project, could be dependent on the manager's arbitrary decision about the risk premium to use within the required rate of return.

Derive the Net Present Value of the Equity Investment

The two methods described up to this point discount cash flows based on the total cost of the project's capital. That is, they compare the *NPV* of the project's cash flows to the initial capital outlay. They ignore debt payments because the cost of debt is captured within the required rate of return on the capital to be invested in the project. When an MNC is considering financing a portion of the foreign project within that country, these methods are less effective because they do not measure how the debt payments could affect dollar cash flows. Some of the MNC's debt payments in the foreign country may reduce its exposure to exchange rate risk, which affects the cash flows that will ultimately be received by the parent.

To explicitly account for the exchange rate effects, an MNC can assess the project by measuring the *NPV* of the equity investment in the project. All debt payments are explicitly accounted for when using this method, so the analysis fully accounts for the effects of expected exchange rate movements. Then, the present value of all cash flows received by the parent can be compared to the parent's initial equity investment in the project. The MNC can conduct this same analysis for various financing alternatives to determine the one that yields the most favorable *NPV* for the project.

EXAMPLE

Reconsider Lexon Co., which might finance the Argentine project with partial financing from Argentina. More details are needed to illustrate this point. Assume that Lexon would need to invest 80 million Argentine pesos (AP) in the project. Since the peso is currently

worth \$.50, Lexon needs the equivalent of \$40 million. It will use equity for 50 percent of the funds needed, or \$20 million. It will use debt to obtain the remaining capital. For its debt financing, Lexon decides that it will either borrow dollars and convert the funds into pesos or borrow pesos. The project will be terminated in one year; at that time, the debt will be repaid, and any earnings generated by the project will be remitted to Lexon's parent in the United States. The project is expected to result in revenue of AP200 million, and operating expenses in Argentina will be AP10 million. Lexon expects that the Argentine peso will be valued at \$.40 in one year.

This project will not generate any revenue in the United States, but Lexon does expect to incur operating expenses of \$10 million in the United States. It will also incur dollar-denominated interest expenses if it finances the project with dollar-denominated debt. Any dollar-denominated expenses provide tax benefits, as the expenses will reduce U.S. taxable income from other operations. The amount of debt used in each country affects the interest payments incurred and the taxes paid in that country.

The analysis needs to incorporate the debt payments directly into the cash flow estimates. Consequently, the focus is on comparing the present value of dollar cash flows earned on the equity investment to the initial equity outlay. If neither alternative has a positive *NPV*, the proposed project will not be undertaken. If both alternatives have positive *NPVs*, the project will be financed with the capital structure that is expected to generate a higher *NPV*.

Cash flows to the parent are discounted at the parent's cost of equity, which represents the required rate of return on the project by the parent's shareholders. Since the debt payments are explicitly accounted for, the analysis compares the present value of the project's cash flows to the initial equity investment that would be invested in the project.

The analysis of the two financing alternatives is provided in Exhibit 17.5. If Lexon uses dollar-denominated debt, a larger amount of funds will be remitted and thus will be subject to the exchange rate effect. Conversely, if Lexon uses peso-denominated debt, the amount of remitted funds is smaller. The analysis shows that the project generates an *NPV* of \$1.135 million if the project is partially financed with dollar-denominated debt versus an *NPV* of \$4.17 million if it is partially financed with peso-denominated debt. Since the peso is expected to depreciate significantly over the year, Lexon will be better off using the more expensive peso-denominated debt than the dollar-denominated debt. That is, the higher cost of the debt is more than offset by the reduced exposure to adverse exchange rate effects. Consequently, Lexon should finance this project with a capital structure that includes the peso-denominated debt, even though the interest rate on this debt is high. ■

Relationship between Project's Net Present Value and Capital Structure. The *NPV* of the foreign project is dependent on the project's capital structure for two reasons. First, the capital structure can affect the cost of capital. Second, the capital structure influences the amount of cash flows that are distributed to creditors in the local country before taxes are imposed and funds are remitted to the parent. Since the capital structure influences the tax and exchange rate effects, it affects the cash flows that are ultimately received by the parent.

Tradeoff When Financing in Developing Countries. The results here do not imply that foreign debt should always be used to finance a foreign project. The advantage of using foreign debt to offset foreign revenue (reduce exchange rate risk) must be weighed against the cost of that debt. Many developing countries commonly have high interest rates on debt, but their local currencies tend to weaken against the dollar. Thus, U.S.-based MNCs must either tolerate a high cost of local debt financing or borrow in dollars but be exposed to significant exchange rate risk. The tradeoff can best be assessed by estimating the *NPV* of the MNC's equity investment under each financing alternative, as illustrated in the previous example.

Exhibit 17.5 Analysis of Lexon's Project Based on Two Financing Alternatives (Numbers are in millions.)

	Rely on U.S. Debt (\$20 Million Borrowed) and Equity of \$20 Million	Rely on Argentine Debt (40 Million Pesos Borrowed) and Equity of \$20 Million
Argentine revenue	AP200	AP200
– Argentine operating expenses	–AP10	–AP10
– Argentine interest expenses (15% rate)	–AP0	–AP6
= Argentine earnings before taxes	= AP190	= AP184
– Taxes (30% tax rate)	–AP57	–AP55.2
= Argentine earnings after taxes	= AP133	= AP128.8
– Principal payments on Argentine debt	–AP0	–AP40
= Amount of pesos to be remitted	= AP133	= AP88.8
× Expected exchange rate of AP	×\$.40	×\$.40
= Amount of dollars received from converting pesos	= \$53.2	= \$35.52
– U.S. operating expenses	–\$10	–\$10
– U.S. interest expenses (9% rate)	–\$1.8	–\$0
+ U.S. tax benefits on U.S. expenses (based on 30% tax rate)	+\$3.54	+\$3
– Principal payments on U.S. debt	–\$20	–\$0
= Dollar cash flows	= \$24.94	= \$28.52
Present value of dollar cash flows, discounted at the cost of equity (assumed to be 18%)	\$21.135	\$24.17
– Initial equity outlay	–\$20	–\$20
= NPV	= \$1.135	= \$4.17

Accounting for Multiple Periods. The preceding example focused on just one period to illustrate how the analysis is conducted. The analysis can easily be adapted to assess multiple periods, however. The same analysis shown for a single year in Exhibit 17.5 could be applied to multiple years. For each year, the revenue and expenses would be recorded, with the debt payments explicitly accounted for. The tax and exchange rate effects would be measured to derive the amount of cash flows received in each year. A discount rate that reflects the required rate of return on equity would be applied to measure the present value of the cash flows to be received by the parent.

Comparing Alternative Debt Compositions. In this example, the focus was on whether the debt should be in pesos or in dollars. Other debt compositions could also have been considered, such as the following:

- 75 percent of the debt denominated in Argentine pesos, and the remaining debt denominated in dollars
- 50 percent of the debt denominated in Argentine pesos, and the remaining debt denominated in dollars

- 25 percent of the debt denominated in Argentine pesos, and the remaining debt denominated in dollars

The analysis can also account for different debt maturity structures. For example, if an MNC is considering a short-term Argentine loan that would be paid off in one year, it can estimate the cash outflow payments associated with the debt repayment. If it is considering a medium-term or long-term loan denominated in pesos, the payments will be spread out more and incorporated within the cash outflows over time. The analysis can easily account for a combination of short-term loans in Argentina and long-term loans in the United States or vice versa. It can account for floating-rate loans that adjust to market interest rates by developing one or more scenarios for how market interest rates will change in the future. The key is that all interest and principal payments on the debt are accounted for, along with any other cash flows. Then the present value of the cash flows can be compared to the initial outlay to determine whether the equity investment is feasible.

Comparing Alternative Capital Structures. In the example of Lexon Co., the proportion of debt versus equity was held constant for both alternatives that were analyzed. In reality, the capital structure decision will consider not only the composition of the debt, but also the proportion of equity versus debt that should be obtained. The same type of analysis could have been used to compare different capital structures, such as the following:

- 50 percent equity and 50 percent debt
- 60 percent equity and 40 percent debt
- 70 percent equity and 30 percent debt

If Lexon in the previous example used more U.S. equity, there would be two obvious effects:

1. A higher initial equity investment would be needed.
2. With the lower debt level, the cash outflows needed to make debt payments would be reduced, so the present value of cash flows would increase.

The first effect would reduce the *NPV* of the equity investment in the project, whereas the second effect would increase it. As in the previous example, an analysis would have to be conducted to determine whether using more equity would result in a higher *NPV* generated by the equity investment.

Assessing Alternative Exchange Rate Scenarios. The example used only one exchange rate scenario, which may not be realistic. A spreadsheet can easily compare the *NPVs* of the two alternatives based on other exchange rate projections. This type of analysis would show that because of the greater exposure, the *NPV* of the project will be more sensitive to exchange rate scenarios if the project is financed with dollar-denominated debt than if it is financed with peso-denominated debt. The values of other variables such as the assumed level of revenue or operating expenses could also be changed to allow for alternative scenarios.

Considering Foreign Stock Ownership. Some capital structure decisions also include foreign shareholders, but the analysis can still be conducted in the same manner. The analysis becomes complicated only if the foreign ownership changes the corporate governance in some way that affects the firm's cash flows. Many U.S.-based MNCs have issued stock in foreign countries where they do business. They will consider issuing stock only in countries where there is a sufficient demand for it.

When there is not sufficient foreign demand, an MNC can more easily place its stock in the U.S. market. Research has found that U.S.-based MNCs that issue stock on a global basis (in more than one country) are more capable of issuing new stock at the stock's prevailing market price than MNCs that issue stock only in their home country. However, the results can vary for a particular MNC. Those MNCs that have established global name recognition may be better able to place shares in foreign countries.

Normally, an MNC will focus its stock offerings in a few countries where it does most of its business. The stock will be listed on the local stock exchange in the countries where the shares are issued and will be denominated in the local currency. The listing is necessary to create a secondary market for the stock in the foreign country. Many investors will consider purchasing a stock only if there is a local secondary market where they can easily sell their shares.

The MNC's Capital Structure Decision

An MNC's capital structure decision involves the choice of debt versus equity financing within all of its subsidiaries. Thus, its overall capital structure is essentially a combination of all of its subsidiaries' capital structures. MNCs recognize the tradeoff between using debt and using equity for financing their operations. The advantages of using debt as opposed to equity vary with corporate characteristics specific to each MNC and specific to the countries where the MNC has established subsidiaries. Some of the more relevant corporate characteristics specific to an MNC that can affect its capital structure are identified first, followed by country characteristics.

HTTP://

<http://www.worldbank.org>
Country profiles, analyses,
and sectoral surveys.

Influence of Corporate Characteristics

Characteristics unique to each MNC can influence its capital structure. Some of the more common firm-specific characteristics that affect the MNC's capital structure are identified here.

Stability of MNC's Cash Flows. MNCs with more stable cash flows can handle more debt because there is a constant stream of cash inflows to cover periodic interest payments. Conversely, MNCs with erratic cash flows may prefer less debt because they are not assured of generating enough cash in each period to make larger interest payments on debt. MNCs that are diversified across several countries may have more stable cash flows since the conditions in any single country should not have a major impact on their cash flows. Consequently, these MNCs may be able to handle a more debt-intensive capital structure.

MNC's Credit Risk. MNCs that have lower credit risk (risk of default on loans provided by creditors) have more access to credit. Any factors that influence credit risk can affect an MNC's choice of using debt versus equity. For example, if an MNC's management is thought to be strong and competent, the MNC's credit risk may be low, allowing for easier access to debt. MNCs with assets that serve as acceptable collateral (such as buildings, trucks, and adaptable machinery) are more able to obtain loans and may prefer to emphasize debt financing. Conversely, MNCs with assets that are not marketable have less acceptable collateral and may need to use a higher proportion of equity financing.

MNC's Access to Retained Earnings. Highly profitable MNCs may be able to finance most of their investment with retained earnings and therefore use an equity-intensive capital structure. Conversely, MNCs that have small levels of retained earnings may rely on debt financing. Growth-oriented MNCs are less able

to finance their expansion with retained earnings and tend to rely on debt financing. MNCs with less growth need less new financing and may rely on retained earnings (equity) rather than debt.

MNC's Guarantees on Debt. If the parent backs the debt of its subsidiary, the subsidiary's borrowing capacity might be increased. Therefore, the subsidiary might need less equity financing. At the same time, however, the parent's borrowing capacity might be reduced, as creditors will be less willing to provide funds to the parent if those funds might be needed to rescue the subsidiary.

MNC's Agency Problems. If a subsidiary in a foreign country cannot easily be monitored by investors from the parent's country, agency costs are higher. To maximize the firm's stock price, the parent may induce the subsidiary to issue stock rather than debt in the local market so that its managers there will be monitored. In this case, the foreign subsidiary is referred to as "partially owned" rather than "wholly owned" by the MNC's parent. This strategy can affect the MNC's capital structure. It may be feasible when the MNC's parent can enhance the subsidiary's image and presence in the host country or can motivate the subsidiary's managers by allowing them partial ownership.

One concern about a partially owned foreign subsidiary is a potential conflict of interest, especially when its managers are minority shareholders. These managers may make decisions that can benefit the subsidiary at the expense of the MNC overall. For example, they may use funds for projects that are feasible from their perspective but not from the parent's perspective.

Influence of Country Characteristics

In addition to characteristics unique to each MNC, the characteristics unique to each host country can influence the MNC's choice of debt versus equity financing and therefore influence the MNC's capital structure. Specific country characteristics that can influence an MNC's choice of equity versus debt financing are described here.

Stock Restrictions in Host Countries. In some countries, governments allow investors to invest only in local stocks. Even when investors are allowed to invest in other countries, they may not have complete information about stocks of companies outside their home countries. This represents an implicit barrier to cross-border investing. Furthermore, potential adverse exchange rate effects and tax effects can discourage investors from investing outside their home countries. Such impediments to worldwide investing can cause some investors to have fewer stock investment opportunities than others. Consequently, an MNC operating in countries where investors have fewer investment opportunities may be able to raise equity in those countries at a relatively low cost. This could entice the MNC to use more equity by issuing stock in these countries to finance its operations.

Interest Rates in Host Countries. Because of government-imposed barriers on capital flows along with potential adverse exchange rate, tax, and country risk effects, loanable funds do not always flow to where they are needed most. Thus, the price of loanable funds (the interest rate) can vary across countries. MNCs may be able to obtain loanable funds (debt) at a relatively low cost in specific countries, while the cost of debt in other countries may be very high. Consequently, an MNC's preference for debt may depend on the costs of debt in the countries where it operates. If markets are somewhat segmented and the cost of funds in the subsidiary's country appears excessive, the parent may use its own equity to support projects implemented by the subsidiary.

Strength of Host Country Currencies. If an MNC is concerned about the potential weakness of the currencies in its subsidiaries' host countries, it may attempt to finance a large proportion of its foreign operations by borrowing those currencies instead of relying on parent funds. In this way, the subsidiaries will remit a smaller amount in earnings because they will be making interest payments on local debt. This strategy reduces the MNC's exposure to exchange rate risk.

If the parent believes that a subsidiary's local currency will appreciate against the parent's currency, it may have the subsidiary retain and reinvest more of its earnings. The parent may also provide an immediate cash infusion to finance growth in the subsidiary. As a result, there will be a transfer of internal funds from the parent to the subsidiary, possibly resulting in more external financing by the parent and less debt financing by the subsidiary.

Country Risk in Host Countries. A relatively mild form of country risk is the possibility that the host government will temporarily block funds to be remitted by the subsidiary to the parent. Subsidiaries that are prevented from remitting earnings over a period may prefer to use local debt financing. This strategy reduces the amount of funds that are blocked because the subsidiary can use some of the funds to pay interest on local debt.

If an MNC's subsidiary is exposed to risk that a host government might confiscate its assets, the subsidiary may use much debt financing in that host country. Then local creditors that have lent funds will have a genuine interest in ensuring that the subsidiary is treated fairly by the host government. In addition, if the MNC's operations in a foreign country are terminated by the host government, it will not lose as much if its operations are financed by local creditors. Under these circumstances, the local creditors will have to negotiate with the host government to obtain all or part of the funds they have lent after the host government liquidates the assets it confiscates from the MNC.

A less likely way to reduce exposure to a high degree of country risk is for the subsidiary to issue stock in the host country. Minority shareholders benefit directly from a profitable subsidiary. Therefore, they could pressure their government to refrain from imposing excessive taxes, environmental constraints, or any other provisions that would reduce the profits of the subsidiary. Having local investors own a minority interest in a subsidiary may also offer some protection against threats of adverse actions by the host government. Another advantage of a partially owned subsidiary is that it may open up additional opportunities in the host country. The subsidiary's name will become better known when its shares are acquired by minority shareholders in that country.

Tax Laws in Host Countries. Foreign subsidiaries of an MNC may be subject to a withholding tax when they remit earnings. By using local debt financing instead of relying on parent financing, they will have to make interest payments on the local debt and thus may be able to reduce the amount to be remitted periodically. Thus, they may reduce the withholding taxes by using more local debt financing. Foreign subsidiaries may also consider using local debt if the host governments impose high corporate tax rates on foreign earnings; in this way, the subsidiaries can benefit from the tax advantage of using debt where taxes are high (unless the higher taxes paid would be fully offset by tax credits received by the parent).

Revising the Capital Structure in Response to Changing Conditions

As economic and political conditions in a country change or an MNC's business changes, the costs or benefits of each component cost of capital can change as well. An MNC may revise its capital structure in response to the changing conditions.

E X A M P L E

1. A firm discontinues its business in Argentina and decides to reduce its Argentine debt. It no longer has Argentine peso revenue that it used to offset exchange rate risk.
2. The U.S. government reduces taxes on dividends, which makes stocks more attractive to investors than investing in debt securities. Thus, the cost of equity has decreased, causing some MNCs to shift their capital structure.
3. Interest rates in Europe increase, causing some U.S.-based MNCs to support their European operations with dollar-denominated debt.
4. Interest rates in Singapore decrease, causing some U.S.-based MNCs with operations in Singapore to increase their use of debt denominated in Singapore dollars.
5. Political risk in Peru increases, causing some U.S.-based MNCs to finance more of their business there with local debt so that they have some support from local institutions with political connections. ■

In recent years, MNCs have revised their capital structures to reduce their withholding taxes on remitted earnings by subsidiaries.

E X A M P L E

Clayton, Inc., is a U.S.-based MNC whose parent plans to raise \$50 million of capital in the United States by issuing stock in the United States. The parent plans to convert the \$50 million into 70 million Australian dollars (A\$) and use the funds to build a subsidiary in Australia. Since the parent may need some return on this capital to pay its shareholders' dividends, it will require that its Australian subsidiary remit A\$2 million per year. Assume that the Australian government will impose a withholding tax of 10 percent on the remitted earnings, which will amount to A\$200,000 per year. Clayton, Inc., can revise its capital structure in several different ways to reduce or avoid this tax. Most solutions involve reducing the reliance of the subsidiary on the parent's capital.

First, Clayton's Australian subsidiary could borrow funds in Australia as its main source of capital instead of relying on the U.S. parent. Thus, it would use some of its earnings to pay its local creditors interest instead of remitting a large amount of earnings to the U.S. parent. This financing strategy minimizes the amount of funds that would be remitted and can therefore minimize the withholding taxes that would be paid to the Australian government. In addition, the subsidiary would not need as much equity investment from the parent. One limitation of this strategy is that the subsidiary may increase its debt to an excessive level.

If Clayton prefers not to increase the subsidiary's debt, the subsidiary could raise funds by issuing stock in the host country. In this case, the subsidiary would use a portion of its funds to pay dividends to local shareholders rather than remit those funds to the parent. Once again, withholding taxes are minimized because the subsidiary would not remit much money to the parent. The issuance of stock would create a minority ownership in Australia, which reduces the parent's control over the subsidiary. The parent could retain control, however, by instructing the subsidiary to issue nonvoting stock.

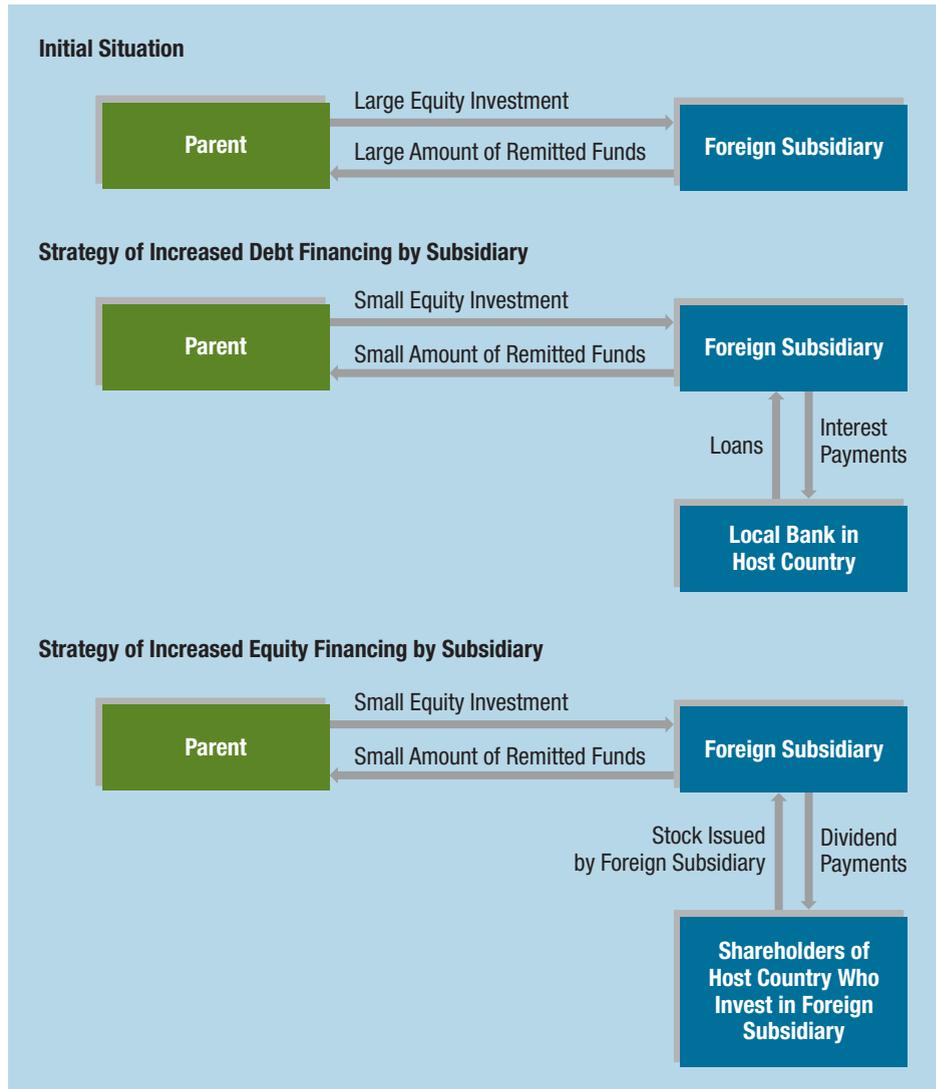
Both strategies minimize Clayton's withholding tax, but the first strategy reflects a more debt-intensive capital structure while the second strategy reflects a more equity-intensive capital structure. The two strategies are illustrated in Exhibit 17.6. These strategies could also have been used to reduce Clayton's exposure to exchange rate risk because they minimize the amount of Australian dollars that will be converted into U.S. dollars. ■

Interaction between Subsidiary and Parent Financing Decisions

HTTP://

<http://finance.yahoo.com/>
Capital repatriation regulations imposed by each country

The decision by a subsidiary to use internal equity financing (retaining and reinvesting its earnings) or obtain debt financing can affect its degree of reliance on parent financing and the amount of funds that it can remit to the parent. Thus, its financing decisions should be made in consultation with the parent. The potential impact of

Exhibit 17.6 Adjusting the Multinational Capital Structure to Reduce Withholding Taxes

two common subsidiary financing situations on the parent's capital structure are explained next.

Impact of Increased Debt Financing by the Subsidiary

When global conditions increase a subsidiary's debt financing, the amount of internal equity financing needed by the subsidiary is reduced. As these extra internal funds are remitted to the parent, the parent will have a larger amount of internal funds to use for financing before resorting to external financing. Assuming that the parent's operations absorb all internal funds and require some debt financing, there are offsetting effects on the capital structures of the subsidiary and the parent. The increased use of debt financing by the subsidiary is offset by the reduced debt financing of the parent. Nevertheless, the cost of capital for the MNC overall could have changed for two reasons. First, the revised composition of debt financing (more by the subsidiary,

less by the parent) could affect the interest charged on the debt. Second, it could affect the MNC's overall exposure to exchange rate risk and therefore influence the risk premium on capital.

In some situations, the subsidiary's increased use of debt financing will not be offset by the parent's reduced debt financing. For example, if there are any restrictions or excessive taxes on remitted funds, the parent may not be able to rely on the subsidiary and may need some debt financing as well. In this case, international conditions that encourage increased use of debt financing by the subsidiary will result in a more debt-intensive capital structure for the MNC. Again, for reasons already mentioned, the cost of capital to the MNC could be affected by the subsidiary's increased debt financing. In addition, the use of a higher proportion of debt financing for the MNC overall would also affect the cost of capital.

Impact of Reduced Debt Financing by the Subsidiary

When global conditions encourage the subsidiary to use less debt financing, the subsidiary will need to use more internal financing. Consequently, it will remit fewer funds to the parent, reducing the amount of internal funds available to the parent. If the parent's operations absorb all internal funds and require some debt financing, there are offsetting effects on the capital structures of the subsidiary and parent. The subsidiary's reduced use of debt financing is offset by the parent's increased use. For reasons expressed earlier, the cost of capital may change even if the MNC's overall capital structure does not.

If the parent's operations can be fully financed with internal funds, the parent will not use debt financing. Thus, the subsidiary's reduced debt financing is not offset by the parent's increased debt financing, and the MNC's overall capital structure becomes more equity intensive.

Summary of Interaction between Subsidiary and Parent Financing Decisions

Exhibit 17.7 provides a summary of some of the more relevant characteristics of the host country that can affect a subsidiary's preference for debt or equity financing. The decision by a subsidiary to finance with local debt affects the amount of funds remitted to the parent and therefore affects the amount of internal financing available to the parent. Since the subsidiary's local debt financing decisions are influenced by

Exhibit 17.7 Effect of Global Conditions on Financing

Host Country Conditions	Amount of Local Debt Financing by Subsidiary	Amount of Internal Funds Available to Parent	Amount of Debt Financing Provided by Parent
Higher country risk	Higher	Higher	Lower
Higher interest rates	Lower	Lower	Higher
Lower interest rates	Higher	Higher	Lower
Expected weakness of local currency	Higher	Higher	Lower
Expected strength of local currency	Lower	Lower	Higher
Blocked funds	Higher	Higher	Lower
High withholding taxes	Higher	Higher	Lower
Higher corporate taxes	Higher	Higher	Lower

country-specific characteristics like those shown in Exhibit 17.7, the MNC's overall capital structure is partially influenced by the locations of the foreign subsidiaries.

Local versus Global Target Capital Structure

An MNC may deviate from its “local” target capital structure in each country where financing is obtained, yet still achieve its “global” target capital structure (based on consolidating the capital structures of all its subsidiaries). The following examples of particular foreign country conditions illustrate the motive behind deviating from a local target capital structure while still satisfying a global target capital structure.

Offsetting a Subsidiary's High Degree of Financial Leverage

First, consider that Country A does not allow MNCs with headquarters elsewhere to list their stocks on its local stock exchange. Under these conditions, an MNC's subsidiary that desires to expand its operations will likely decide to borrow funds by issuing bonds or obtaining bank loans rather than by issuing stock in this country. By being forced to use debt financing here, the MNC may deviate from its target capital structure, which could raise its overall cost of capital. The parent might offset this concentration in debt by using more equity financing for its own operations.

Alternatively, consider an MNC that desires financing in Country B, which is experiencing political turmoil. The use of local bank loans would be most appropriate since local banks may be able to prevent the subsidiary's operations from being affected by political conditions in that country. If the local banks serve as creditors to the MNC's subsidiary, it is in their interest to ensure that the subsidiary's operations are sufficiently profitable to repay its loans. Since the subsidiary may have more financial leverage than is desired for the MNC overall, the parent may use less financial leverage to finance its own operations in order to achieve its overall (“global”) target capital structure.

Offsetting a Subsidiary's Low Degree of Financial Leverage

Suppose that Country C allows the MNC's subsidiary to issue stock there and list its stock on its local exchange. Also assume that the project to be implemented in that country will not generate net cash flows for 5 years, thereby limiting the subsidiary's ability to generate internal financing. In this case, equity financing by the subsidiary may be more appropriate. The subsidiary could issue stock, and, by paying low or zero dividends, it could avoid any major cash outflows for the next 5 years. The parent might offset the subsidiary's concentration in equity by instructing one of its other foreign subsidiaries in some other host country to use mostly debt financing. Alternatively, the parent could use more debt financing to support its own operations.

Limitations in Offsetting a Subsidiary's Abnormal Degree of Financial Leverage

The examples provided up to this point suggest that the parent can offset the imbalance created by a foreign subsidiary by adjusting the way it finances its own operations. However, the revision of the parent's capital structure may result in a higher cost of capital for the parent. Given that the subsidiary's financing decision could affect the parent's capital structure and therefore affect the parent's cost of capital, the subsidiary must consider the impact of its decision on the parent. The subsidiary's de-

cision to use an unusually high or low degree of financial leverage should be made only if the benefits outweigh any costs for the MNC overall.

The strategy of ignoring a “local” target capital structure in favor of a “global” target capital structure is rational as long as it is acceptable to foreign creditors and investors. However, if foreign creditors and investors monitor each subsidiary’s local capital structure, they may require a higher rate of return on funds provided to the MNC. For example, the “local” target capital structures for the subsidiaries based in Country A (from the earlier example) and in Country B are debt intensive. Creditors in these two countries may penalize the subsidiary for its highly leveraged local capital structure, even though the MNC’s global capital structure is more balanced because they believe that the subsidiary may be unable to meet its high debt repayments. If the parent plans to back the subsidiaries, however, it could guarantee debt repayment to the creditors in the foreign countries, which might reduce their risk perception and lower the cost of the debt. Many MNC parents stand ready to financially back their subsidiaries because, if they did not, their subsidiaries would be unable to obtain adequate financing.

SUMMARY

- The cost of capital may be lower for an MNC than for a domestic firm because of characteristics peculiar to the MNC, including its size, its access to international capital markets, and its degree of international diversification. Yet, some characteristics peculiar to an MNC can increase the MNC’s cost of capital, such as exposure to exchange rate risk and to country risk.

- Costs of capital vary across countries because of country differences in the components that comprise the cost of capital. Specifically, there are differences in the risk-free rate, the risk premium on debt, and the cost of equity among countries. Countries with a higher risk-free rate tend to exhibit a higher cost of capital.

- An MNC’s capital structure decision is influenced by corporate characteristics such as the stability of

the MNC’s cash flows, its credit risk, and its access to earnings. The capital structure is also influenced by characteristics of the countries where the MNC conducts business, such as stock restrictions, interest rates, strength of local currencies, country risk, and tax laws. Some characteristics favor an equity-intensive capital structure because they discourage the use of debt. Other characteristics favor a debt-intensive structure because of the desire to protect against risks by creating foreign debt. Given that the relative costs of capital components vary among countries, the MNC’s capital structure may be dependent on the specific mix of countries in which it conducts operations.

POINT COUNTER-POINT

Should the Reduced Tax Rate on Dividends Affect an MNC’s Capital Structure?

Point No. The change in the tax law reduces the taxes that investors pay on dividends. It does not change the taxes paid by the MNC. Thus, it should not affect the capital structure of the MNC.

Counter-Point A dividend income tax reduction may encourage a U.S.-based MNC to offer dividends to its shareholders or to increase the dividend payment. This strategy reflects an increase in the cash outflows

of the MNC. To offset these outflows, the MNC may have to adjust its capital structure. For example, the next time that it raises funds, it may prefer to use equity rather than debt so that it could free up some cash outflows (the outflows to cover dividends would be less than outflows associated with debt).

Who Is Correct? Use the Internet to learn more about this issue. Which argument do you support? Offer your own opinion on this issue.

SELF TEST

Answers are provided in Appendix A at the back of the text.

1. When Goshen, Inc., focused only on domestic business in the United States, it had a low debt level. As it expanded into other countries, it increased its degree of financial leverage (on a consolidated basis). What factors would have caused Goshen to increase its financial leverage (assuming that country risk was not a concern)?
2. Lynde Co. is a U.S.-based MNC with a large subsidiary in the Philippines financed with equity from the parent. In response to news about a possible change in the Philippine government, the subsidiary revised its capital structure by borrowing from local banks and transferring the equity investment back to the U.S. parent. Explain the likely motive behind these actions.
3. Duever Co. (a U.S. firm) noticed that its financial leverage was substantially lower than that of most successful firms in Germany and Japan in the same industry. Is Duever's capital structure less than optimal?
4. Atlanta, Inc., has a large subsidiary in Venezuela, where interest rates are very high and the currency is expected to weaken. Assume that Atlanta perceives the country risk to be high. Explain the tradeoff involved in financing the subsidiary with local debt versus an equity investment from the parent.
5. Reno, Inc., is considering a project to establish a plant for producing and selling consumer goods in an undeveloped country. Assume that the host country's economy is very dependent on oil prices, the local currency of the country is very volatile, and the country risk is very high. Also assume that the country's economic conditions are unrelated to U.S. conditions. Should the required rate of return (and therefore the risk premium) on the project be higher or lower than that of other alternative projects in the United States?

QUESTIONS AND APPLICATIONS

1. **Capital Structure of MNCs.** Present an argument in support of an MNC's favoring a debt-intensive capital structure. Present an argument in support of an MNC's favoring an equity-intensive capital structure.
2. **Optimal Financing.** Wizard, Inc., has a subsidiary in a country where the government allows only a small amount of earnings to be remitted to the United States each year. Should Wizard finance the subsidiary with debt financing by the parent, equity financing by the parent, or financing by local banks in the foreign country?
3. **Country Differences.** Describe general differences between the capital structures of firms based in the United States and those of firms based in Japan. Offer an explanation for these differences.
4. **Local versus Global Capital Structure.** Why might a firm use a "local" capital structure at a particular subsidiary that differs substantially from its "global" capital structure?
5. **Cost of Capital.** Explain how characteristics of MNCs can affect the cost of capital.
6. **Capital Structure and Agency Issues.** Explain why managers of a wholly owned subsidiary may be more likely to satisfy the shareholders of the MNC.
7. **Target Capital Structure.** LaSalle Corp. is a U.S.-based MNC with subsidiaries in various less developed countries where stock markets are not well established. How can LaSalle still achieve its "global" target capital structure of 50 percent debt and 50 percent equity, if it plans to use only debt financing for the subsidiaries in these countries?

8. **Financing Decision.** Drexel Co. is a U.S.-based company that is establishing a project in a politically unstable country. It is considering two possible sources of financing. Either the parent could provide most of the financing, or the subsidiary could be supported by local loans from banks in that country. Which financing alternative is more appropriate to protect the subsidiary?
9. **Financing Decision.** Veer Co. is a U.S.-based MNC that has most of its operations in Japan. Since the Japanese companies with which it competes use more financial leverage, it has decided to adjust its financial leverage to be in line with theirs. With this heavy emphasis on debt, Veer should reap more tax advantages. It believes that the market's perception of its risk will remain unchanged, since its financial leverage will still be no higher than that of its Japanese competitors. Comment on this strategy.
10. **Financing Tradeoffs.** Pullman, Inc., a U.S. firm, has been highly profitable, but prefers not to pay out higher dividends because its shareholders want the funds to be reinvested. It plans for large growth in several less developed countries. Pullman would like to finance the growth with local debt in the host countries of concern to reduce its exposure to country risk. Explain the dilemma faced by Pullman, and offer possible solutions.
11. **Costs of Capital across Countries.** Explain why the cost of capital for a U.S.-based MNC with a large subsidiary in Brazil is higher than for a U.S.-based MNC in the same industry with a large subsidiary in Japan. Assume that the subsidiary operations for each MNC are financed with local debt in the host country.
12. **WACC.** An MNC has total assets of \$100 million and debt of \$20 million. The firm's before-tax cost of debt is 12 percent, and its cost of financing with equity is 15 percent. The MNC has a corporate tax rate of 40 percent. What is this firm's weighted average cost of capital?
13. **Cost of Equity.** Wiley, Inc., an MNC, has a beta of 1.3. The U.S. stock market is expected to generate an annual return of 11 percent. Currently, Treasury bonds yield 2 percent. Based on this information, what is Wiley's estimated cost of equity?
14. **WACC.** Blues, Inc., is an MNC located in the United States. Blues would like to estimate its weighted average cost of capital. On average, bonds issued by Blues yield 9 percent. Currently, T-bill rates are 3 percent. Furthermore, Blues' stock has a beta of 1.5, and the return on the Wilshire 5000 stock index is expected to be 10 percent. Blues' target capital structure is 30 percent debt and 70 percent equity. If Blues is in the 35 percent tax bracket, what is its weighted average cost of capital?
15. **Effects of September 11.** Rose, Inc., of Dallas, Texas, needed to infuse capital into its foreign subsidiaries to support their expansion. As of August 2001, it planned to issue stock in the United States. However, after the September 11, 2001, terrorist attack, it decided that long-term debt was a cheaper source of capital. Explain how the terrorist attack could have altered the two forms of capital.
16. **Nike's Cost of Capital.** If Nike decides to expand further in South America, why might its capital structure be affected? Why will its overall cost of capital be affected?

Advanced Questions

17. **Interaction between Financing and Investment.** Charleston Corp. is considering establishing a subsidiary in either Germany or the United Kingdom. The subsidiary will be mostly financed with loans from the local banks in the host country chosen. Charleston has determined that the revenue generated from the British subsidiary will be slightly more favorable than the revenue generated by the German subsidiary, even after considering tax and exchange rate effects. The initial outlay will be the same, and both countries appear to be politically stable. Charleston decides to establish the subsidiary in the United Kingdom because of the revenue advantage. Do you agree with its decision? Explain.
18. **Financing Decision.** In recent years, several U.S. firms have penetrated Mexico's market. One of the biggest challenges is the cost of capital to finance businesses in Mexico. Mexican interest rates tend to be much higher than U.S. interest rates. In some periods, the Mexican government does not attempt to lower the interest rates because higher rates may attract foreign investment in Mexican securities.
- How might U.S.-based MNCs expand in Mexico without incurring the high Mexican interest expenses when financing the expansion? Are any disadvantages associated with this strategy?
 - Are there any additional alternatives for the Mexican subsidiary to finance its business itself after it has been well established? How might this strategy affect the subsidiary's capital structure?
19. **Financing Decision.** Forest Co. produces goods in the United States, Germany, and Australia and sells the goods in the areas where they are produced. Foreign earnings are periodically remitted to the U.S. parent. As the euro's interest rates have declined to a very low level, Forest has decided to finance its German operations with borrowed funds

in place of the parent's equity investment. Forest will transfer the U.S. parent's equity investment in the German subsidiary over to its Australian subsidiary. These funds will be used to pay off a floating-rate loan, as Australian interest rates have been high and are rising. Explain the expected effects of these actions on the consolidated capital structure and cost of capital of Forest Co.

Given the strategy to be used by Forest, explain how its exposure to exchange rate risk may have changed.

20. **Financing in a High-Interest-Rate Country.** Fairfield Corp., a U.S. firm, recently established a subsidiary in a less developed country that consistently experiences an annual inflation rate of 80 percent or more. The country does not have an established stock market, but loans by local banks are available with a 90 percent interest rate. Fairfield has decided to use a strategy in which the subsidiary is financed entirely with funds from the parent. It believes that in this way it can avoid the excessive interest rate in the host country. What is a key disadvantage of using this strategy that may cause Fairfield to be no better off than if it paid the 90 percent interest rate?
21. **Cost of Foreign Debt versus Equity.** Carazona, Inc., is a U.S. firm that has a large subsidiary in Indonesia. It wants to finance the subsidiary's operations in Indonesia. However, the cost of debt is currently about 30 percent there for firms like Carazona or government agencies that have a very strong credit rating. A consultant suggests to Carazona that it should use equity financing there to avoid the high interest expense. He suggests that since Carazona's cost of equity in the United States is about 14 percent, the Indonesian investors should be satisfied with a return of about 14 percent as well. Clearly explain why the consultant's advice is not logical. That is, explain why Carazona's cost of equity in Indonesia would not be less than Carazona's cost of debt in Indonesia.
22. **Integrating Cost of Capital and Capital Budgeting.** Zylon Co. is a U.S. firm that provides technology software for the government of Singapore. It will be paid S\$7 million at the end of each of the next 5 years. The entire amount of the payment represents earnings since Zylon created the technology software years ago. Zylon is subject to a 30 percent corporate income tax rate in the United States. Its other cash inflows (such as revenue) are expected to be offset by its other cash outflows (due to operating expenses) each year, so its profits on the Singapore contract represent its expected annual net cash flows. Its financing costs are not considered within its estimate of cash flows. The Singapore dollar (S\$) is presently worth \$.60, and Zylon uses that spot exchange rate as a forecast of future exchange rates.

The risk-free interest rate in the United States is 6 percent while the risk-free interest rate in Singapore is 14 percent. Zylon's capital structure is 60 percent debt and 40 percent equity. Zylon is charged an interest rate of 12 percent on its debt. Zylon's cost of equity is based on the CAPM. It expects that the U.S. annual market return will be 12 percent per year. Its beta is 1.5.

Quiso Co., a U.S. firm, wants to acquire Zylon and offers Zylon a price of \$10 million.

Zylon's owner must decide whether to sell the business at this price and hires you to make a recommendation. Estimate the NPV to Zylon as a result of selling the business, and make a recommendation about whether Zylon's owner should sell the business at the price offered.
23. **Financing with Foreign Equity.** Orlando Co. has its U.S. business funded with dollars with a capital structure of 60 percent debt and 40 percent equity. It has its Thailand business funded with Thai baht with a capital structure of 50 percent debt and 50 percent equity. The corporate tax rate on U.S. earnings and on Thailand earnings is 30 percent. The annualized 10-year risk-free interest rate is 6 percent in the United States and 21 percent in Thailand. The annual real rate of interest is about 2 percent in the United States and 2 percent in Thailand. Interest rate parity exists. Orlando pays 3 percentage points above the risk-free rates when it borrows, so its before-tax cost of debt is 9 percent in the United States and 24 percent in Thailand. Orlando expects that the U.S. annual stock market return will be 10 percent per year, and the Thailand annual stock market return will be 28 percent per year. Its business in the United States has a beta of .8 relative to the U.S. market, while its business in Thailand has a beta of 1.1 relative to the Thai market. The equity used to support Orlando's Thai business was created from retained earnings by the Thailand subsidiary in previous years. However, Orlando Co. is considering a stock offering in Thailand that is denominated in Thai baht and targeted at Thai investors. Estimate Orlando's cost of equity in Thailand that would result from issuing stock in Thailand.
24. **Assessing Foreign Project Funded with Debt and Equity.** Nebraska Co. plans to pursue a project in Argentina that will generate revenue of 10 million Argentine pesos (AP) at the end of each of the next 4 years. It will have to pay operating expenses of AP3 million per year. The Argentine government will charge a 30 percent tax rate on profits. All

after-tax profits each year will be remitted to the U.S. parent and no additional taxes are owed. The spot rate of the AP is presently \$.20. The AP is expected to depreciate by 10 percent each year for the next 4 years. The salvage value of the assets will be worth AP40 million in 4 years after capital gains taxes are paid. The initial investment will require \$12 million, half of which will be in the form of equity from the U.S. parent, and half of which will come from borrowed funds. Nebraska will borrow the funds in Argentine pesos. The annual interest rate on the funds borrowed is 14 percent. Annual interest (and zero principal) is paid on the debt at the end of each year, and the interest payments can be deducted before determining the tax owed to the Argentine government. The entire principal of the loan will be paid at the end of year 4. Nebraska requires a rate of return of at least 20 percent on its invested equity for this project to be worthwhile. Determine the *NPV* of this project. Should Nebraska pursue the project?

25. Sensitivity of Foreign Project Risk to Capital

Structure. Texas Co. produces drugs and plans to acquire a subsidiary in Poland. This subsidiary is a lab that would perform biotech research. Texas Co. is attracted to the lab because of the cheap wages of scientists in Poland. The parent of Texas Co. would review the lab research findings of the subsidiary in Poland when deciding which drugs to produce and would then produce the drugs in the United States. The expenses incurred in Poland will represent about half of the total expenses incurred by Texas Co. All drugs produced by Texas Co. are sold in the United States, and this situation would not change in the future. Texas Co. has considered three ways to finance the acquisition of the Polish subsidiary if it buys it. First, it could use 50 percent equity funding (in dollars) from the parent and 50 percent borrowed funds in dollars. Second, it could use 50 percent equity funding (in dollars) from the parent and 50 percent borrowed funds in Polish zloty. Third, it could use 50 percent equity

funding by selling new stock to Polish investors denominated in Polish zloty and 50 percent borrowed funds denominated in Polish zloty. Assuming that Texas Co. decides to acquire the Polish subsidiary, which financing method for the Polish subsidiary would minimize the exposure of Texas to exchange rate risk? Explain.

26. Cost of Capital and Risk of Foreign Financing. Vogl Co. is a U.S. firm that conducts major importing and exporting business in Japan, whereby all transactions are invoiced in dollars. It obtained debt in the United States at an interest rate of 10 percent per year. The long-term risk-free rate in the United States is 8 percent. The stock market return in the United States is expected to be 14 percent annually. Vogl's beta is 1.2. Its target capital structure is 30 percent debt and 70 percent equity. Vogl Co. is subject to a 25 percent corporate tax rate.

a. Estimate the cost of capital to Vogl Co.

b. Vogl has no subsidiaries in foreign countries but plans to replace some of its dollar-denominated debt with Japanese yen-denominated debt since Japanese interest rates are low. It will obtain yen-denominated debt at an interest rate of 5 percent. It cannot effectively hedge the exchange rate risk resulting from this debt because of parity conditions that make the price of derivatives contracts reflect the interest rate differential. How could Vogl Co. reduce its exposure to the exchange rate risk resulting from the yen-denominated debt without moving its operations?

Discussion in the Boardroom

This exercise can be found in Appendix E at the back of this textbook.

Running Your Own MNC

This exercise can be found on the Xtra! website at <http://maduraxtra.swlearning.com>.

BLADES, INC. CASE

Assessment of Cost of Capital

Recall that Blades has tentatively decided to establish a subsidiary in Thailand to manufacture roller blades. The new plant will be utilized to produce "Speedos," Blades' primary product. Once the subsidiary has been established in Thailand, it will be operated for 10 years, at which time it is expected to be sold.

Ben Holt, Blades' chief financial officer (CFO), believes the growth potential in Thailand will be extremely high over the next few years. However, his optimism is not shared by most economic forecasters, who predict a slow recovery of the Thai economy, which has been very negatively affected by recent events in that

country. Furthermore, forecasts for the future value of the baht indicate that the currency may continue to depreciate over the next few years.

Despite the pessimistic forecasts, Ben Holt believes Thailand is a good international target for Blades' products because of the high growth potential and lack of competitors in Thailand. At a recent meeting of the board of directors, Holt presented his capital budgeting analysis and pointed out that the establishment of a subsidiary in Thailand had a net present value (NPV) of over \$8 million even when a 25 percent required rate of return is used to discount the cash flows resulting from the project. Blades' board of directors, while favorable to the idea of international expansion, remained skeptical. Specifically, the directors wondered where Holt obtained the 25 percent discount rate to conduct his capital budgeting analysis and whether this discount rate was high enough. Consequently, the decision to establish a subsidiary in Thailand has been delayed until the directors' meeting next month.

The directors also asked Holt to determine how operating a subsidiary in Thailand would affect Blades' required rate of return and its cost of capital. The directors would like to know how Blades' characteristics would affect its cost of capital relative to roller blade manufacturers operating solely in the United States. Furthermore, the capital asset pricing model (CAPM) was mentioned by two directors, who would like to know how Blades' systematic risk would be affected by expanding into Thailand. Another issue that was raised is how the cost of debt and equity in Thailand differ from the corresponding costs in the United States, and whether these differences would affect Blades' cost of capital. The last issue that was raised during the meeting was whether Blades' capital structure would be affected by expanding into Thailand. The directors have asked Holt to conduct a thorough analysis of these issues and report back to them at their next meeting.

Ben Holt's knowledge of cost of capital and capital structure decisions is somewhat limited, and he requires your help. You are a financial analyst for Blades, Inc. Holt has gathered some information regarding Blades' characteristics that distinguish it from roller blade manufacturers operating solely in the United States, its systematic risk, and the costs of debt and equity in Thailand, and he wants to know whether and how this information will affect Blades' cost of capital and its capital structure decision.

Regarding Blades' characteristics, Holt has gathered information regarding Blades' size, its access to the Thai capital markets, its diversification benefits from a Thai expansion, its exposure to exchange rate risk, and its exposure to country risk. Although Blades' expansion into Thailand classifies the company as an MNC, Blades is still relatively small compared to U.S.

roller blade manufacturers. Also, Blades' expansion into Thailand will give it access to the capital and money markets there. However, negotiations with various commercial banks in Thailand indicate that Blades will be able to borrow at interest rates of approximately 15 percent, versus 8 percent in the United States.

Expanding into Thailand will diversify Blades' operations. As a result of this expansion, Blades would be subject to economic conditions in Thailand as well as the United States. Ben Holt sees this as a major advantage since Blades' cash flows would no longer be solely dependent on the U.S. economy. Consequently, he believes that Blades' probability of bankruptcy would be reduced. Nevertheless, if Blades establishes a subsidiary in Thailand, all of the subsidiary's earnings will be remitted back to the U.S. parent, which would create a high level of exchange rate risk. This is of particular concern because current economic forecasts for Thailand indicate that the baht will depreciate further over the next few years. Furthermore, Holt has already conducted a country risk analysis for Thailand, which resulted in an unfavorable country risk rating.

Regarding Blades' level of systematic risk, Holt has determined how Blades' beta, which measures systematic risk, would be affected by the establishment of a subsidiary in Thailand. Holt believes that Blades' beta would drop from its current level of 2.0 to 1.8 because the firm's exposure to U.S. market conditions would be reduced by the expansion into Thailand. Moreover, Holt estimates that the risk-free interest rate is 5 percent and the required return on the market is 12 percent.

Holt has also determined that the costs of both debt and equity are higher in Thailand than in the United States. Lenders such as commercial banks in Thailand require interest rates higher than U.S. rates. This is partially attributed to a higher risk premium, which reflects the larger degree of economic uncertainty in Thailand. The cost of equity is also higher in Thailand than in the United States. Thailand is not as developed as the United States in many ways, and various investment opportunities are available to Thai investors, which increases the opportunity cost. However, Holt is not sure that this higher cost of equity in Thailand would affect Blades, as all of Blades' shareholders are located in the United States.

Ben Holt has asked you to analyze this information and to determine how it may affect Blades' cost of capital and its capital structure. To help you in your analysis, Holt would like you to provide answers to the following questions:

1. If Blades expands into Thailand, do you think its cost of capital will be higher or lower than the cost of capital of roller blade manufacturers operating solely in the United States? Substantiate

- your answer by outlining how Blades' characteristics distinguish it from domestic roller blade manufacturers.
2. According to the CAPM, how would Blades' required rate of return be affected by an expansion into Thailand? How do you reconcile this result with your answer to question 1? Do you think Blades should use the required rate of return resulting from the CAPM to discount the cash flows of the Thai subsidiary to determine its *NPV*?
 3. If Blades borrows funds in Thailand to support its Thai subsidiary, how would this affect its cost of capital? Why?
 4. Given the high level of interest rates in Thailand, the high level of exchange rate risk, and the high (perceived) level of country risk, do you think Blades will be more or less likely to use debt in its capital structure as a result of its expansion into Thailand? Why?

SMALL BUSINESS DILEMMA

Multinational Capital Structure Decision at the Sports Exports Company

The Sports Exports Company has considered a variety of projects, but all of its business is still in the United Kingdom. Since most of its business comes from exporting footballs (denominated in pounds), it remains exposed to exchange rate risk. On the favorable side, the British demand for its footballs has risen consistently every month. Jim Logan, the owner of the Sports Exports Company, has retained more than \$100,000 (after the pounds were converted into dollars) in earnings since he began his business. At this point in time, his capital structure is mostly his own equity, with very little debt. Jim has periodically considered establishing a very small subsidiary in the United Kingdom to produce the footballs there (so that he would not have to export them from the United States). If he does establish this subsidiary, he has sev-

eral options for the capital structure that would be used to support it: (1) use all of his equity to invest in the firm, (2) use pound-denominated long-term debt, or (3) use dollar-denominated long-term debt. The interest rate on British long-term debt is slightly higher than the interest rate on U.S. long-term debt.

1. What is an advantage of using equity to support the subsidiary? What is a disadvantage?
2. If Jim decides to use long-term debt as the primary form of capital to support this subsidiary, should he use dollar-denominated debt or pound-denominated debt?
3. How can the equity proportion of this firm's capital structure increase over time after it is established?

INTERNET/EXCEL EXERCISE

The Bloomberg website provides interest rate data for many countries and various maturities. Its address is <http://www.bloomberg.com>.

Go to the Markets section and then to Bonds and Rates. Assume that an MNC would pay 1 percent more on borrowed funds than the risk-free (government) rates shown at the Bloomberg website. Determine the cost

of debt (use a 10-year maturity) for the U.S. parent that borrows dollars. Click on Japan and determine the cost of funds for a foreign subsidiary in Japan that borrows funds locally. Then click on Germany and determine the cost of debt for a subsidiary in Germany that borrows funds locally. Offer some explanations as to why the cost of debt may vary among the three countries.