Multinational Capital Structure and Cost of Capital

MNCs rely on capital to finance their expansion of existing subsidiaries, the creation of new subsidiaries, and other projects. Since the MNC’s decisions regarding its capital structure determine its cost of capital and the cost of capital affects the profitability on its projects, its capital structure decisions affect its value.

Components of Capital

An MNC needs capital to expand its operations. If an MNC’s parent decides to establish a foreign subsidiary, it may invest its own cash into the subsidiary. The cash infusion in the subsidiary represents an equity investment by the parent, so that the parent is the sole owner of the subsidiary. The subsidiary uses the cash infusion to develop its business operations in the host country, and it can remit earnings to the parent over time as a means of providing a return on the parent’s equity investment. As time passes, the subsidiary can also build more equity by retaining some of the earnings that it generates.

An alternative method by which the subsidiary can build more equity is to offer its own stock to the public, assuming that it receives approval from the MNC’s parent. If shares of the subsidiary stock are sold to investors in the host country, the subsidiary would no longer be wholly owned by the parent. However, the parent would likely remain as the majority owner.

If an MNC allows a subsidiary to issue its own stock, it may also offer the managers of the subsidiary shares of this stock as partial compensation in order to encourage them to make decisions that maximize the value of the stock. One concern about a foreign subsidiary that is partially financed with its own stock is the 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. While some subsidiaries have issued their own stock, most MNC parents prefer to own all the equity of their subsidiaries. Thus, the subsidiary is more likely to increase its equity over time by retaining earnings rather than by issuing its own stock.

Meanwhile, the MNC’s parent may decide to further expand its operations internationally by establishing another subsidiary in another country, in which it again invests some cash to create an equity investment. This subsidiary uses the cash infusion to develop its business operations, and will ultimately add to its capital by retaining some earnings and by obtaining loans from local banks. This subsidiary has its own capital structure, which may vary substantially from that of the other subsidiary and the parent. When an MNC has foreign subsidiaries, its overall (or “global”) capital structure is the combination of the capital structures of the parent and all subsidiaries. In general, an MNC can increase its

CHAPTER OBJECTIVES

The specific objectives of this chapter are to:

- describe the key components of an MNC’s capital,
- identify the factors that affect an MNC’s capital structure,
- explain the interaction between a subsidiary and parent in capital structure decisions,
- explain how the cost of capital is estimated, and
- explain why the cost of capital varies among countries.
capital internally by retaining earnings or externally by issuing debt or equity. Common sources of external debt and equity are described next.

**External Sources of Debt**

When MNCs consider debt financing, they consider the following sources.

**Domestic Bond Offering**  MNCs commonly engage in a domestic bond offering in their home country in which the funds are denominated in their local currency. They hire an investment bank to help determine the amount of the offering and the price at which the bonds can be sold. The investment bank also serves the distribution role by selling the bonds to many institutional investors. Maturities on the debt commonly range from 10 to 20 years. Investors who purchase the bonds do not have to hold the bonds until maturity because they can sell the bonds to other investors in the secondary market.

The proceeds of a domestic bond offering are initially denominated in the parent’s local currency. Thus, if the parent plans to use a portion of the proceeds to provide financing to any of its foreign subsidiaries, it would convert the funds into the subsidiary’s local currency at the prevailing exchange rate.

**Global Bond Offering**  MNCs can engage in a global bond offering (with the help of an investment bank), in which they simultaneously sell bonds denominated in the currencies of multiple countries. They focus on obtaining funds from a few countries where they have large subsidiaries that need financing. For example, an offering by a U.S.-based MNC may consist of $20 million in bonds sold to U.S. investors to finance its home operations, British pound-denominated bonds valued at 15 million British pounds sold to British investors to finance its subsidiaries that conduct business in the United Kingdom, and Swiss franc-denominated bonds valued at 10 million Swiss francs sold to Swiss investors to finance its subsidiaries that conduct business in Switzerland. Investors who purchase any of these bonds can sell them before maturity to other investors in the secondary market.

**Private Placement of Bonds**  Another source of debt for MNCs is to offer a private placement of bonds to financial institutions in their home country or in the foreign country where they are expanding. Private placements of debt may reduce transaction costs because the debt is placed with a small number of large investors. However, MNCs may not be able to obtain all the funds that they need with a private placement of debt. Privately placed bonds may carry some restrictions on their resale in the secondary market. Thus, they may offer limited liquidity to investors.

**Loans from Financial Institutions**  An MNC’s parent commonly borrows funds from financial institutions. It not only benefits from access to funds but also establishes a business relationship with the financial institutions, giving it access to other services such as foreign exchange and cash management. Subsidiaries of an MNC commonly borrow funds from local financial institutions in their respective host country and may also rely on other services from these financial institutions.

Loans from financial institutions to MNCs typically specify an adjustable interest rate that changes every 6 months or 1 year in accordance with the annualized interbank loan rate (called the London interbank offered rate, or LIBOR) in the same currency. For example, the interest rate on a loan denominated in British pounds may be reset every year for loans denominated in pounds, plus an annualized premium of 3 percent. The interest rate on a loan denominated in Swiss francs may be reset every year at the prevailing LIBOR rate for interbank loans denominated in Swiss francs, plus an annualized premium of 3 percent. While the formula is the same for both loans, the interest rates may vary substantially
between the two loans because the prevailing interbank loan rate on one currency might be much higher than the interbank loan rate on the other currency. For example, if the prevailing LIBOR for British pound-denominated loans is higher than the prevailing LIBOR for Swiss franc-denominated loans, the interest rate on a loan to an MNC denominated in pounds would be higher than the interest rate on a loan denominated in Swiss francs.

The size of the premium paid by the MNC above the interbank interest rate is dependent on the credit risk of the MNC that receives the loan. A relatively low loan premium (such as 2 percent) would be charged by creditors on a loan to a very profitable MNC that is backed by collateral. Conversely, a much higher premium (such as 5 percent) would be charged by creditors on loans to weaker MNCs that are not backed by collateral.

If the MNC wants to borrow a large amount of funds, it may rely on a syndicate of lenders rather than a single lender. The structure of a syndicated loan can be tailored to meet the MNC’s needs. For example, the loan can be segmented into portions so that each portion is denominated in a currency that is needed by a particular foreign subsidiary. The interest rate on the loan per currency will be periodically reset every 6 months or 1 year based on that currency’s prevailing LIBOR.

The term of a loan can be set to fit the preferences of the MNC. While MNCs commonly rely on long-term loans to finance their operations, they may also obtain short-term loans and lines of credit (as described in Chapter 20) to ensure access to cash and their ability to cover short-term funding needs. Some MNCs continually roll over their short-term loans upon maturity so that they essentially rely on some short-term debt as a permanent form of financing to complement their other sources of capital.

**External Sources of Equity**

When MNCs need to obtain external equity, they consider the following sources:

**Domestic Equity Offering** MNCs can engage in a domestic equity offering in their home country in which the funds are denominated in their local currency. They may distribute a portion of the proceeds to their subsidiaries. Any funds transferred to subsidiaries have to be converted into the subsidiary’s local currency at the prevailing exchange rate.

**Global Equity Offering** While most MNCs obtain equity funding in their home country, some of them pursue a global equity offering in which they can simultaneously access equity from multiple countries. Their efforts in placing the stock are focused on a few countries where they have large subsidiaries that need financing. The stock will be listed on an exchange in the foreign country and denominated in the local currency so that investors there can sell their holdings of the stock in the local stock market. Investors in a foreign country will be more willing to purchase shares in a global equity offering if the MNC places a large number of shares in that country because this ensures a more active and liquid secondary market for the stock in that country. Thus, investors in that country can more easily sell their shares in the secondary market in the future.

*Example*

Georgia Co. engages in a global offering in which a portion of the stock is denominated in dollars. The proceeds received from selling the dollar-denominated stock are used to support the operations of subsidiaries in the United States. This stock is placed with investors in the United States, who can easily sell the stock in the future because it is listed on U.S. stock exchanges.

Another portion of the global stock offering is denominated in Japanese yen, and the proceeds of this portion are used to support operations by Georgia’s Japanese subsidiary. This stock is placed with Japanese investors who can easily sell the stock in the future because it is listed on a Japanese stock exchange.

Another portion of Georgia’s global stock offering is denominated in euros, and the proceeds of this portion are to be used to support operations by Georgia’s European subsidiary. This stock is placed with European investors who can easily sell the stock in the future because it is listed on a European stock exchange.
MNCs that issue stock on a global basis are typically more capable of issuing new stock at the stock’s prevailing market price than MNCs that issue stock only in their home country. These MNCs tend to be larger and have a strong global presence. MNCs that have established global name recognition may be better able to place shares in foreign countries. A global equity offering may be ineffective in some countries where there are weak disclosure laws, weak shareholder protection laws, and weak enforcement of the securities laws, because there may be limited demand for stock by investors in these countries.

In addition, an MNC would only consider raising funds from a stock offering in a foreign country if the country’s prevailing stock market valuations are relatively high. If the valuations are low, a stock offering would not attract much interest and would not generate a sufficient amount of funds to the MNC.

**Private Placement of Equity** Another source of equity for MNCs is to offer a private placement of equity to financial institutions in their home country or in the foreign country where they are expanding. As with private placements of debt, private placements of equity may reduce transaction costs. However, MNCs may not be able to obtain all the funds that they need with a private placement. The funding must come from a limited number of large investors who are willing to maintain the investment for a long period of time because the equity may be subject to conditions regarding its resale, and therefore has very limited liquidity.

**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. 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.

**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 on debt. 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. 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 do not serve as adequate collateral 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 generate small levels of earnings may rely on debt.
financing. Growth-oriented MNCs may commonly need more funds than what can be accessed from retaining earnings, and tend to rely on debt financing. Conversely, MNCs with less growth may be able to 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 because 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. The parent may induce the subsidiary to rely more on debt financing, because this will force the subsidiary to be disciplined in order to cover its periodic loan payments.

**Influence of Host Country Characteristics**

In addition to characteristics unique to each MNC, the following 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.

**Interest Rates in Host Countries** 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 instruct its subsidiaries to finance a large proportion of their operations by borrowing those currencies instead of relying on parent financing. 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. As a result, there the subsidiary will reduce its reliance on debt financing.

**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 the risk that the 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.
Alternatively, the subsidiary could issue stock in the host country. Minority shareholders benefit directly from a profitable subsidiary. Therefore, they could pressure their local 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.

**Response to Changing Country Characteristics**

The country characteristics just described not only vary among countries but also can change over time in any particular country. Thus, these characteristics not only explain why the ideal capital structure may vary among countries but also how the ideal capital structure could change within any particular country over time.

**EXAMPLE**

Plymouth Co. has subsidiaries in several countries that have just revised their capital structure levels, as follows:

- Its subsidiary in Argentina decides to rely more on retained earnings because local interest rates increased, and therefore caused the cost of local debt to increase. Thus, its capital structure will become more equity-intensive.
- The parent of Plymouth Co. is concerned that the Japanese yen will depreciate substantially in 2 years. It instructs its subsidiary in Japan to remit all earnings to the parent over the next year, before the yen depreciates. Consequently, the Japanese subsidiary cannot rely on retained earnings (equity) to support its operations, and must rely more heavily on local debt to support its operations.
- Plymouth Co. has a subsidiary in Chile, where the government announced it will block funds for the next year. This subsidiary will use the funds that it would have remitted to pay off some local debt in Chile. Thus, its capital structure will become more equity-intensive.
- Plymouth Co. has a subsidiary in India, where the government announced it will remove its withholding tax on remitted funds. This subsidiary has been retaining earnings in order to avoid the withholding tax in recent years, and will now remit more of its earnings to its parent. Thus, it will rely less on retained earnings, and more heavily on local debt to support its operations.

Overall, two country conditions caused subsidiaries to use a more debt-intensive capital structure, while two other country conditions caused subsidiaries to use a more equity-intensive capital structure.

**WEB**

http://finance.yahoo.com

Capital repatriation regulations imposed by each country.

**SUBSIDIARY VERSUS PARENT CAPITAL STRUCTURE DECISIONS**

The capital structure of an MNC’s subsidiaries may vary as some subsidiaries are subject to conditions that favor debt financing, while other subsidiaries are subject to conditions that favor equity financing. Because the subsidiary’s capital structure decision affects the amount of retained earnings remitted by that subsidiary to its parent, it affects the amount of equity contributed to the parent, and therefore affects the parent’s capital structure. Thus, the capital structure decisions of subsidiaries affect the capital structure of the parent and should be made in consultation with the parent. The potential
The impact of two common subsidiary financing situations on the parent’s capital structure are explained next.

**Impact of Increased Subsidiary Debt Financing**

When a subsidiary relies heavily on debt financing, its need for its internal equity financing (retained earnings) is reduced. As these extra internal funds are remitted by the subsidiary 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. 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.

**Impact of Reduced Subsidiary Debt Financing**

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. Thus, even though a local (specific subsidiary) capital structure has changed, the MNC’s global capital structure does not necessarily need to change. An MNC can still achieve its target capital structure by offsetting one subsidiary’s change in financial leverage with an opposite change in financial leverage of another subsidiary or of the parent.

**Limitations in Offsetting a Subsidiary’s Leverage**

The strategy of offsetting a subsidiary’s shift in financial leverage to achieve a global target capital structure is rational as long as it is acceptable to foreign creditors and investors. However, foreign creditors may charge higher loan rates to a subsidiary that uses a highly leveraged local capital structure (even if 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.

**Multinational Cost of Capital**

Because an MNC’s capital represents its debt and its equity, its cost of capital is based on its cost of debt and its cost of equity.

**MNC’s Cost of Debt**

An MNC’s cost of debt is dependent on the interest rate that it pays when borrowing funds. The interest rate that it pays is equal to the risk-free rate at the time it borrows funds, along with a credit risk premium that compensates creditors for accepting credit (default) risk when extending credit to the MNC. Since interest expenses incurred by corporations are deductible when determining a corporation’s taxable income, there is a tax advantage associated with debt.
MNC’s Cost of Equity

An MNC creates equity by retaining earnings or by issuing new stock. The firm’s cost of retained earnings reflects an opportunity cost, which represents what the existing shareholders could have earned if they had received the earnings as dividends and invested the funds themselves. The MNC’s cost of new common equity (from issuing new common stock) also reflects an opportunity cost of 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).

An MNC’s cost of equity contains a risk premium (above the risk-free interest rate) that compensates the equity investors for their willingness to invest in the equity. If investors thought the MNC would offer a future return on equity that was no higher than the prevailing risk-free rate, they would not invest in its equity because they would rather earn that same return without any exposure to risk by investing in a risk-free Treasury security. When investing in an MNC’s equity, there is uncertainty surrounding the return on that investment. Thus, price of equity must be low enough for investors so that it is expected to increase and thus offer a return to investors that contains a premium above the risk-free rate.

The equity risk premium that investors would expect in order to invest in the MNC’s equity instead of investing in a risk-free security or in other securities is dependent on the risk of the MNC. Those MNCs that have higher levels of uncertainty surrounding their cash flows exhibit a higher level of risk, which means that the return to investors who invest in the stock is uncertain. The return may be less than the risk-free rate, and may even be negative. Thus, the stock price must be low enough to entice investors so that it can possibly offer a large enough return to compensate for the risk involved.

Estimating an MNC’s Cost of Capital

The cost of an MNC’s capital (referred to as \( k_c \)) can be measured as the cost of its debt plus its cost of equity, with appropriate weights applied in order to reflect the percentage of the MNC’s capital represented by debt and equity, respectively:

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

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

The weights to debt and equity are shown within brackets in the equation above.

Comparing Costs of Debt and Equity

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, as an MNC increases its proportion of debt, 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. The exhibit
shows the relationship between the firm’s degree of financial leverage (as measured by ratio of debt to total capital in the horizontal axis) and the cost of capital (in the vertical axis). When the ratio of debt to total capital is low, there is not much concern that the firm will go bankrupt because the firm should be able to easily cover its debt payments. Under these conditions, the tax advantage of debt outweighs the disadvantage of debt (potential concerns about bankruptcy).

However, after some point (labeled X in Exhibit 17.1), the ratio of debt to total capital is high enough to trigger major concern by creditors and shareholders about the firm’s potential bankruptcy. The larger amount of debt would cause the firm to make higher debt payments, which increases the probability that the firm will go bankrupt. At such a higher level of debt, the firm would incur a higher cost of debt to reflect the higher level of credit risk. In addition, investors might require a higher cost of equity to invest in the firm because of the higher risk of bankruptcy. Consequently, when the ratio of debt to total capital is beyond point X on the horizontal axis, the cost of capital rises as the ratio of debt to total capital increases. The firm’s cost of capital is minimized at point X, where it benefits from the tax advantage of debt, but does not use such an excessive level of debt that would cause the tax advantage of debt to be overwhelmed by concerns about the firm’s bankruptcy.

Cost of Capital for MNCs versus Domestic Firms

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, 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.

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.”

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. In addition, an MNC that is more exposed to exchange rate fluctuations will usually have a wider (more dispersed) distribution of possible cash flows in future periods. This could force creditors and shareholders to require a higher return, which increases the MNC’s 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 more moderate forms of country risk, such as changes in a host government’s tax laws, could also affect an MNC’s subsidiary’s cash flows. Since there is a possibility that these events will occur, so the capital budgeting process should incorporate such risk.

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.

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 the cost of equity for 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

- \( R_f \) = risk-free rate of return
- \( R_m \) = market return
- \( B \) = beta of stock

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 U.S. stock index is commonly used as a proxy for the market when assessing the stock of a U.S. company).

**Implications of the CAPM for an MNC’s Risk** A U.S.-based MNC that increases the amount of its international business may be able to reduce the sensitivity of its stock returns to a stock index, and therefore can reduce its stock’s beta. Based on the
Implications of the CAPM for an MNC’s Projects  Advocates of the CAPM may suggest that a project’s beta can be used to determine the required rate of return for that project. The beta of a U.S.-based firm’s project represents the sensitivity of the project’s cash flow to U.S. market conditions. For a well-diversified firm with cash flows generated by several projects, each project contains two types of risk: (1) systematic risk, which is the risk of a project that is attributed to general market conditions, and (2) unsystematic risk, which is the risk that is unique to the specific project. Capital asset pricing theory suggests that the unsystematic risk of projects can be ignored because it will be diversified away if a firm engages in many projects. However, the systematic risk of the firm’s projects cannot be diversified away because all the firm’s projects are exposed to this risk.

Because many projects of U.S.-based MNCs are in foreign countries, their cash flows are less sensitive to general U.S. market conditions. Thus, the betas of their projects should be relatively low, which means that required rate of return by investors should be low. This translates into a lower cost of equity, and therefore a lower overall cost of capital.

However, some investors may consider unsystematic project risk to be relevant. For example, when a U.S.-based MNC has projects in Asia and South America, the cash flows of these projects may not be very sensitive to U.S. market conditions, which means that the systematic risk of the projects is low. Yet the project cash flows may be very uncertain because of unsystematic risk, such as high country risk associated with a particular project. Investors will not necessarily ignore the unsystematic risk even if the MNC is well diversified because they recognize that it could affect the overall cash flows and profitability of the MNC. Under these conditions, the required rate of return by investors will not necessarily be lower for MNCs’ projects than for projects of domestic firms.

Applying CAPM with a World Market Index  The CAPM presented above is based on the sensitivity of project cash flows to a U.S. stock index. If U.S. investors invest mostly in the United States, their investments are systematically affected by the U.S. market. Thus, MNCs may be more capable of pursuing international projects with cash flows that are not sensitive to the U.S. market.

However, a world market may be 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, not just a low sensitivity to U.S. market conditions. When MNCs adopt projects that are isolated from general 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. However, it may be more difficult for MNCs to achieve lower betas than domestic firms on projects if the beta is based on the sensitivity to general world market conditions.

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, this discussion illustrates how the conclusion from comparing the cost of equity of MNCs versus domestic firms is dependent on one’s measurement of risk.
COST 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. MNCs based in some countries with a low cost of capital will have a larger set of feasible (positive net present value) projects; thus, these MNCs can more easily increase their world market share.

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 debt 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 credit risk premium is higher. Explanations for country differences in the risk-free rate and in the credit risk premium follow.

**Differences in the Risk-Free Rate**  The risk-free rate is the interest rate charged on loans to a country’s government that is perceived to have no risk of defaulting on the loans. Many country governments are presumed to have no credit risk because they can increase taxes or reduce expenditures if necessary in order to have sufficient funds to repay debt.

Any factors that influence the supply and/or demand for loanable funds within a country 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 may affect the corporate demand for loanable funds, and therefore may affect interest rates.

A country’s demographics influence the supply of savings available and the amount of loanable funds demanded. Because 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.

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 higher levels of expected 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.

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. Most of these countries have a similar risk-free rate because they use the same currency.
Differences in the Credit Risk Premium  Most MNCs have to pay a credit premium above the prevailing risk-free rate in the country where they obtain loans, because they are not perceived to be risk free like the local country government. The credit risk premium paid by an MNC must be large enough to compensate creditors for taking the risk that the MNC may not meet its payment obligations.

The credit risk premium on an MNC’s loans can be highly influenced by a country’s characteristics, such as the country’s economic conditions, the relationship between its creditors and borrowers, and its government’s willingness to rescue troubled companies. 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 debt obligations is lower, allowing for a lower credit 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. Because 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 local 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 based in that country. 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 (such as during the credit crisis of 2008) to protect particular industries, the probability that a failing firm will be rescued by the government is lower there than in 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. The cost of equity among firms per country can vary because of differences in country characteristics.

Differences in the Risk-Free Rate  As risk-free interest rates vary among countries, so does the cost of equity. When the country’s risk-free interest rate is high, local investors would only invest in equity if the potential return is sufficiently higher than that
they can earn at the risk-free rate. Thus, firms that wish to attract equity funding must compensate the local investors by offering a high return. Conversely, if the country’s interest rate is low, local investors may be more willing to consider equity investments because they do not give up much by switching away from an investment in risk-free government securities.

**Differences in the Equity Risk Premium** The equity risk premium is partially based on investment opportunities in the country of concern. In a country where firms have many investment opportunities, potential returns may be relatively high. Firms are able to sell stock at relatively high prices, which means that they can obtain equity funding at a low cost (they pay a relatively small equity premium). Conversely, in a country where investment opportunities are limited, investors will be less willing to invest in equity. Firms would have to sell stock at relatively low prices, which means that they can only obtain equity funding at a high cost (they pay a large equity premium). In other words, they have to offer a relatively large amount of stock in order to obtain adequate funding to pursue a particular project.

A second factor that can influence the equity risk premium is the country risk. In a country where the government is stable and is not viewed as a threat to business...
expansion, local firms are more capable of selling stock easily. They can issue stock at relatively high prices because of the large number of investors who are willing to buy stock, which allows the firms to access equity funding at a relatively low cost. Conversely, in a country where country risk problems (such as government corruption, political instability, and government bureaucracy) are severe, local firms may only be able to sell stock at a relatively low price. That is, they would have to pay a high equity premium to attract investors because of concerns that the local environment could disrupt business opportunities.

In addition, the country’s laws on corporate disclosure, legal protection of local shareholders, and enforcement of securities laws can affect the cost of equity. Laws on corporate disclosure can ensure that local firms are transparent and can be more easily monitored by shareholders. Strong legal protection of shareholders and enforcement of securities laws may encourage more investors to invest in equity without concern about fraud. This enables firms to issue stock at relatively high prices, so that they incur a relatively low cost of equity. Conversely, a lack of disclosure, legal protection, and enforcement in a country will discourage investors from investing in local stocks, so that local firms will have to sell stock at relatively low prices (incur a high cost of equity).

One method of comparing the cost of equity among countries is to review the stock price-earnings ratio of firms in various countries. This ratio measures the market value of a firm’s equity in proportion to that firm’s recent performance (as measured by earnings). A high price-earnings ratio implies that the firm could receive a relatively high price for its stock, based on a given level of earnings. Thus, its cost of equity financing is low. While the price-earnings ratio varies among firms, the mean price-earnings ratio should be higher in countries that have more favorable country characteristics that promote business expansion and shareholder rights.

**SUMMARY**

- An MNC’s capital consists of debt and equity. MNCs can access debt through domestic debt offerings, global debt offerings, private placements of debt, and loans from financial institutions. They can access equity by retaining earnings and by issuing stock through domestic offerings, global offerings, and private placements of equity.
- 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 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.
- If an MNC’s subsidiary’s financial leverage deviates from the global target capital structure, the MNC can still achieve the target if another subsidiary or the parent take an offsetting position in financial leverage. However, even with these offsetting effects, the cost of capital might be affected.
- 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.
POINT COUNTER-POINT

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

Point  No. A 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  Yes. 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.

   a. How might U.S.-based MNCs expand in Mexico without incurring the high Mexican interest expenses when financing their expansion? Are any disadvantages associated with this strategy?

   b. 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 Thai 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
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 and 50 percent borrowed funds denominated in Polish zloty. Third, it could use 50 percent equity funding by selling new stock to Polish investors 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?

27. Measuring the Cost of Capital
Messen Co. (a U.S. firm) borrows U.S. funds at an interest rate of
10 percent per year. Its beta is 1.0. The long-term annualized risk-free rate in the United States is 6 percent. The stock market return in the United States is expected to be 16 percent annually. Messan’s target capital structure is 40 percent debt and 60 percent equity. Messan Co. is subject to a 30 percent corporate tax rate. Estimate the cost of capital to Messan Co.

28. MNC’s Cost of Capital Sandusky Co. is based in the United States. About 30 percent of its sales are from exports to Portugal. Sandusky Co. has no other international business. It finances its operations with 40 percent equity and 60 percent dollar-denominated debt. It borrows its funds from a U.S. bank at an interest rate of 9 percent per year. The long-term risk-free rate in the United States is 6 percent. The long-term risk-free rate in Portugal is 11 percent. The stock market return in the United States is expected to be 13 percent annually. Sandusky’s stock price typically moves in the same direction and by the same degree as the U.S. stock market. Its earnings are subject to a 20 percent corporate tax rate. Estimate the cost of capital to Sandusky Co.

29. MNC’s Cost of Capital Slater Co. is a U.S.-based MNC that finances all operations with debt and equity. It borrows U.S. funds at an interest rate of 11 percent per year. The long-term risk-free rate in the United States is 7 percent. The stock market return in the United States is expected to be 15 percent annually. Slater’s beta is 1.4. Its target capital structure is 20 percent debt and 80 percent equity. Slater Co. is subject to a 30 percent corporate tax rate. Estimate the cost of capital to Slater Co.

30. Change in Cost of Capital Assume that the parent of Naperville Co. will use equity to finance a project in Switzerland, while the parent of Lombard Co. will rely on a dollar-denominated loan finance a project in Switzerland, and Addison Co. will rely on a Swiss franc-denominated loan to finance a project in Switzerland. The firms will arrange their financing in 1 month. This week, the U.S. risk-free long-term interest rate declined, but interest rates in Switzerland did not change. Do you think the estimated cost of capital for the projects by each of these three U.S. firms increased, decreased, or remained unchanged? Explain.

31. Cost of Equity Illinois Co. is a U.S. firm that plans to expand its business overseas. It plans to use all the equity to be obtained in the United States to finance a new project. The project’s cash flows are not affected by U.S. interest rates. Just before Illinois Co. obtains new equity, the risk-free interest rate in the U.S. rises. Will the change in interest rates increase, decrease, or have no effect on the required rate of return on the project. Briefly explain.

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 International Financial Management text companion website. Go to www.cengagebrain.com (students) or login.cengage.com (instructors) and search using ISBN 9781133435174.

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, 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.

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 other 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. 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. He 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.

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, he 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. Logan 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 several 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 Logan 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 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.

**Online Articles with Real World Examples**

Find a recent article online that describes an actual international finance application or a real world example about a specific MNC’s actions that reinforces one or more concepts covered in this chapter.

If your class has an online component, your professor may ask you to post your summary there and provide the web link of the article so that other students can access it. If your class is live, your professor may ask you to summarize your application in class. Your professor may assign specific students to complete this assignment for this chapter, or may allow any students to do the assignment on a volunteer basis.
For recent online articles and real world examples applied to this chapter, consider using the following search terms and include the current year as a search term to ensure that the online articles are recent:

1. [name of an MNC] AND debt
2. multinational AND equity
3. multinational AND capital
4. international AND capital structure
5. international AND cost of capital
6. company AND foreign financing
7. Inc. AND foreign financing
8. subsidiary AND repatriates
9. subsidiary AND financing
10. international AND financing