Chapter 17
Multinational Cost of Capital and Capital Structure

J. Gaspar: Adapted from Jeff Madura, International Financial Management
Capital Structure and MNCs

• Capital structure refers to the amount of debt vs. equity that a firm is willing and able to maintain as capital on its balance sheet without being overly leveraged

• Certain countries, like those in East Asia, allow companies to be more leveraged than those in the EU or the United States

• MNCs take advantage of those differences to leverage their overseas operations to enhance returns to equity holders.
Cost of Capital and MNCs

- Cost of capital is the weighted cost of equity and debt where the weights reflect the firm’s capital structure.
- Cost of equity reflects the opportunity cost for investors in a country and will depend on investment alternatives and risk profile.
- Cost of debt is the net interest expense, i.e., net of taxes which vary with country.
- MNCs take advantage of differences in interest and tax rates among countries to minimize their cost of debt and capital.
Chapter Objectives

- To explain how corporate and country characteristics influence an MNC’s cost of capital;
- To explain why there are differences in the costs of capital across countries; and
- To explain how corporate and country characteristics are considered by MNCs when they establish their capital structure.
Cost of Capital

• A firm’s capital consists of equity (retained earnings and funds obtained by issuing stock) and debt (bank loans or floating bonds).

• The cost of equity reflects an opportunity cost, while the cost of debt is reflected in the interest expenses.

• Firms target a capital structure that will minimize their cost of capital, and hence the required rate of return on projects.
Comparing the Costs of Equity and Debt

- A firm’s weighted average cost of capital

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

where
- \( D \) is the amount of debt of the firm
- \( E \) is the equity of the firm
- \( k_d \) is the before-tax cost of its debt
- \( t \) is the corporate tax rate
- \( k_e \) is the cost of financing with equity
Interest payments on debt are tax deductible...

However, the tradeoff is that the probability of bankruptcy will rise as interest expenses increases.
Factors that Cause the Cost of Capital for MNCs to Differ from That of Domestic Firms

- Larger size
- Greater access to international capital markets
- International diversification
- Exposure to exchange rate risk
- Exposure to country risk
  - Preferential treatment from creditors & smaller per unit flotation costs
  - Possible access to low-cost foreign financing
  - Probability of bankruptcy

Cost of capital
Cost-of-Equity Comparison Using the CAPM

- The capital asset pricing model (CAPM) can be used to assess how the required rate of return of MNCs differ from those of purely domestic firms.

- CAPM: $k_e = R_f + \beta (R_m - R_f)$
  - $k_e$ = the required return on a stock
  - $R_f$ = risk-free rate of return
  - $R_m$ = market return
  - $\beta$ = the beta of the stock
Cost-of-Equity Comparison Using the CAPM

• A stock’s beta represents the sensitivity of the stock’s returns to market premium, just as a project’s beta represents the sensitivity of the project’s cash flows to market conditions.

• The lower a project’s beta, the lower its systematic risk, and the lower its required rate of return, if its unsystematic risk can be diversified away.

• MNCs that increase their foreign sales may be able to reduce its stock’s beta, and hence reduce the required return.
Cost of Capital Across Countries

• The cost of capital can vary across countries, such that:

  1. MNCs based in some countries have a competitive advantage (taxes) over others;
  2. MNCs may be able to adjust their international operations and sources of funds to capitalize on those differences; and
  3. MNCs based in some countries tend to use a debt-intensive capital structure.
Country Differences in the Cost of Debt

• A firm’s cost of debt is determined by:
  1. the prevailing risk-free interest rate of the borrowed currency, and
  2. the risk premium required by creditors in that country.

• The risk-free rate is determined by the interaction of the supply of and demand for funds in a country. It is thus influenced by tax laws, demographics, monetary policies, economic conditions, etc.
Country Differences in the Cost of Debt

• The risk premium compensates creditors for the risk that the borrower may default on its payments.

• The risk premium is influenced by economic conditions, the relationships between corporations and creditors, government intervention, the degree of financial leverage, etc.
Country Differences in the Cost of Equity

- A firm’s return on equity can be measured by the risk-free interest rate plus a premium that reflects the risk of the firm.
- The cost of equity represents an opportunity cost, and is thus also based on the available investment opportunities.
- It can be estimated by applying a price-earnings multiple to a stream of earnings.
- High PE multiple $\Rightarrow$ low cost of equity
Lexon’s Estimated Weighted Average Cost of Capital (WACC) for Financing a Project

<table>
<thead>
<tr>
<th>Possible Capital Structure</th>
<th>U.S. Debt (Cost = 6.3%)</th>
<th>Argentine Debt (Cost = 10.5%)</th>
<th>Equity (Cost = 18%)</th>
<th>Estimated WACC</th>
</tr>
</thead>
<tbody>
<tr>
<td>30% U.S. debt, 70% equity</td>
<td>30% × 6.3% = 1.89%</td>
<td></td>
<td>70% × 18% = 12.6%</td>
<td>14.49%</td>
</tr>
<tr>
<td>50% U.S. debt, 50% U.S. equity</td>
<td>50% × 6.3% = 3.15%</td>
<td></td>
<td>50% × 18% = 9%</td>
<td>12.15%</td>
</tr>
<tr>
<td>20% U.S. debt, 30% Argentine debt, 50% U.S. equity</td>
<td>20% × 6.3% = 1.26%</td>
<td>30% × 10.5% = 3.15%</td>
<td>50% × 18% = 9%</td>
<td>13.41%</td>
</tr>
<tr>
<td>50% Argentine debt, 50% U.S. equity</td>
<td>50% × 10.5% = 5.25%</td>
<td></td>
<td>50% × 18% = 9%</td>
<td>14.25%</td>
</tr>
</tbody>
</table>

U.S. risk free rate = 6%; Risk premium on dollar debt provided by U.S. creditors = 3%; U.S. corporate tax = 30%

Cost of dollar denominated debt = (6% + 3%) × (1 - 0.3) = 6.3%

Argentine risk free rate = 10%; Risk premium on Argentine peso debt provided by Argentine creditors = 5%; Argentine corporate tax rate = 30%

Cost of Argentine peso denominated debt = (10% + 5%) × (1 - 0.3) = 10.5%

Cost of dollar-denominated equity = 6% + 1.5(14% - 6%) = 18%
Using the Cost of Capital for Assessing Foreign Projects

- When the risk level of a foreign project is different from that of the MNC, the MNC’s weighted average cost of capital (WACC) may not be the appropriate required rate of return for the project.
- There are various ways to account for this risk differential in the capital budgeting process.
Using the Cost of Capital for Assessing Foreign Projects

1. Derive NPVs based on the WACC.
   - Compute the probability distribution of NPVs (by adjusting cash flow line items) to determine the probability that the foreign project will generate a return that is at least equal to the firm’s WACC.

2. Adjust the WACC for the risk differential.
   - If the project is riskier, add a risk premium to the WACC to derive the required rate of return on the project.
Using the Cost of Capital for Assessing Foreign Projects

Derive the NPV of the equity investment.

- Explicitly account for the MNC’s debt payments (especially those in the foreign country), so as to fully account for the effects of expected exchange rate movements.
Lexon’s Project: Two Financing Alternatives

<table>
<thead>
<tr>
<th></th>
<th>Rely on U.S. Debt ($20 Million Borrowed) and Equity of $20 Million</th>
<th>Rely on Argentine Debt (40 Million Pesos Borrowed) and Equity of $20 Million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentine revenue</td>
<td>AP200</td>
<td>AP200</td>
</tr>
<tr>
<td>— Argentine operating expenses</td>
<td>— AP10</td>
<td>— AP10</td>
</tr>
<tr>
<td>— Argentine interest expenses (15% rate)</td>
<td>— AP9</td>
<td>— AP6</td>
</tr>
<tr>
<td>= Argentine earnings before taxes</td>
<td>= AP190</td>
<td>= AP184</td>
</tr>
<tr>
<td>— Taxes (30% tax rate)</td>
<td>— AP57</td>
<td>— AP55.2</td>
</tr>
<tr>
<td>= Argentine earnings after taxes</td>
<td>= AP133</td>
<td>= AP128.8</td>
</tr>
<tr>
<td>— Principal payments on Argentine debt</td>
<td>— AP0</td>
<td>— AP40</td>
</tr>
<tr>
<td>= Amount of pesos to be remitted</td>
<td>= AP133</td>
<td>= AP88.8</td>
</tr>
<tr>
<td>× Expected exchange rate of AP</td>
<td>× $0.40</td>
<td>× $0.40</td>
</tr>
<tr>
<td>= Amount of dollars received from converting pesos</td>
<td>= $53.2</td>
<td>= $35.52</td>
</tr>
<tr>
<td>— U.S. operating expenses</td>
<td>— $10</td>
<td>— $10</td>
</tr>
<tr>
<td>— U.S. interest expenses (9% rate)</td>
<td>— $1.8</td>
<td>— $0</td>
</tr>
<tr>
<td>+ U.S. tax benefits on U.S. expenses (based on 30% tax rate)</td>
<td>+ $3.54</td>
<td>+ $3</td>
</tr>
<tr>
<td>— Principal payments on U.S. debt</td>
<td>— $20</td>
<td>— $0</td>
</tr>
<tr>
<td>= Dollar cash flows</td>
<td>= $24.94</td>
<td>= $28.52</td>
</tr>
<tr>
<td>Present value of dollar cash flows, discounted at the cost of equity (assumed to be 18%)</td>
<td>$21.135</td>
<td>$24.17</td>
</tr>
<tr>
<td>— Initial equity outlay</td>
<td>$20</td>
<td>$20</td>
</tr>
<tr>
<td>= NPV</td>
<td>$1.135</td>
<td>$4.17</td>
</tr>
</tbody>
</table>
The MNC’s Capital Structure Decision

- The overall capital structure of an MNC is essentially a combination of the capital structures of the parent body and its subsidiaries.
- The capital structure decision involves the choice of debt versus equity financing, and is influenced by both corporate and country characteristics.
## The MNC’s Capital Structure Decision

### Corporate Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability of MNC’s cash flows</td>
<td>More stable cash flows ⇒ the MNC can handle more debt</td>
</tr>
<tr>
<td>MNC’s credit risk</td>
<td>Lower risk ⇒ more access to credit</td>
</tr>
<tr>
<td>MNC’s access to retained earnings</td>
<td>Profitable / less growth opportunities ⇒ more able to finance with earnings</td>
</tr>
<tr>
<td>MNC’s guarantee on debt</td>
<td>Subsidiary debt is backed by parent ⇒ the subsidiary can borrow more</td>
</tr>
<tr>
<td>MNC’s agency problems</td>
<td>Not easy to monitor subsidiary ⇒ issue stock in host country (Note: there is a potential conflict of interest)</td>
</tr>
</tbody>
</table>
The MNC’s Capital Structure Decision

<table>
<thead>
<tr>
<th>Country Characteristics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock restrictions</td>
<td>Less investment opportunities ⇒ lower cost of raising equity</td>
</tr>
<tr>
<td>Interest rates</td>
<td>Lower rate ⇒ lower cost of debt</td>
</tr>
<tr>
<td>Strength of host country currency</td>
<td>Expect to weaken ⇒ borrow host country currency to reduce exposure</td>
</tr>
<tr>
<td>Country risk</td>
<td>Likely to block funds / confiscate assets ⇒ prefer local debt financing</td>
</tr>
<tr>
<td>Tax laws</td>
<td>Higher tax rate ⇒ prefer local debt financing</td>
</tr>
</tbody>
</table>
Revising the Capital Structure in Response to Changing Conditions

- As economic and political conditions and the MNC’s business strategy change, the costs and benefits of each cost of capital component will change as well.
- An MNC may revise its capital structure in response to the changing conditions.
- For example, some MNCs have revised their capital structures to reduce their withholding taxes on remitted earnings.
Adjusting the Multinational Capital Structure to Reduce Withholding Taxes

Initial Situation

Parent \[\rightarrow\] Large Equity Investment (EI) \[\rightarrow\] Foreign Subsidiary
Large Sum of Remitted Funds (RF)

Strategy of Increased Debt Financing by Subsidiary

Parent \[\rightarrow\] Small EI \[\rightarrow\] Foreign Subsidiary
Small RF 
Loans \[\leftarrow\] Interest Payments 
Local Bank in Host Country

Strategy of Increased Equity Financing by Subsidiary

Parent \[\rightarrow\] Small EI \[\rightarrow\] Foreign Subsidiary
Small RF 
Invest in Stock \[\leftarrow\] Dividend Payments 
Host Country Shareholders
## Effect of Global Conditions on Financing

<table>
<thead>
<tr>
<th>Host Country Conditions</th>
<th>Local Debt Financing by Subsidiary</th>
<th>Internal Funds Available to Parent</th>
<th>Debt Financing Provided by Parent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher country risk</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Higher interest rates</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
</tr>
<tr>
<td>Lower Interest Rates</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Local currency expected to weaken</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Local currency</td>
<td>Lower</td>
<td>Lower</td>
<td>Higher</td>
</tr>
<tr>
<td>Blocked funds</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Higher withholding tax</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
<tr>
<td>Higher corporate tax</td>
<td>Higher</td>
<td>Higher</td>
<td>Lower</td>
</tr>
</tbody>
</table>
Local versus Global Target Capital Structure

• An MNC may deviate from its “local” target capital structure when local conditions and project characteristics are taken into consideration.

• If the proportions of debt and equity financing in the parent or some other subsidiaries can be adjusted accordingly, the MNC may still achieve its “global” target capital structure.
Local versus Global Target Capital Structure

• For example, a high degree of financial leverage is appropriate when the host country is in political turmoil, while a low degree is preferred when the project will not generate net cash flows for some time.

шей A capital structure revision may result in a higher cost of capital. So, an unusually high or low degree of financial leverage should be adopted only if the benefits outweigh the overall costs.