International Capital Structure and the Cost of Capital

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Chapter Objective:

This chapter discusses the cost of capital for the multinational firm.

Chapter Outline

- Cost of Capital
- Cost of Capital in Segmented vs. Integrated Markets
- Does the Cost of Capital Differ Among Countries?
- Cross-Border Listings of Stocks
- Capital Asset Pricing Under Cross-Listings
- The Effect of Foreign Equity Ownership Restrictions
- The Financial Structure of Subsidiaries.

Cost of Capital

- The cost of capital is the minimum rate of return an investment project must generate in order to pay its financing costs.

- For a levered firm, the financing costs can be represented by the weighted average cost of capital.

$$K = (1 - \lambda)K_l + \lambda(1 - \tau)i$$

Weighted Average Cost of Capital

$$K = (1 - \lambda)K_l + \lambda(1 - \tau)i$$
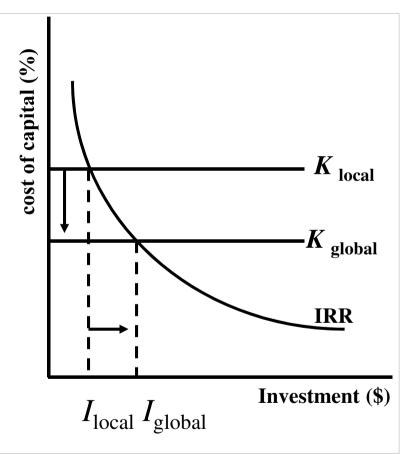
Where

K = weighted average cost of capital

K_l = cost of equity capital for a levered firm

i = pretax cost of debt

λ = debt to total market value ratio

The Firm's Investment Decision and the Cost of Capital

- A firm that can reduce its cost of capital will increase the profitable capital expenditures that the firm can take on and increase the wealth of the shareholders.

- Internationalizing the firm's cost of capital is one such policy.

cost of capital (%)

K local

K global

IRR

Investment ($)

I_{local} I_{global}

Cost of Capital in Segmented vs. Integrated Markets

- The cost of equity capital (K_e) of a firm is the expected return on the firm's stock that investors require.

- This return is frequently estimated using the Capital Asset Pricing Model (CAPM):

$$\overline{R}_i = R_f + \beta_i(\overline{R}_M - R_f)$$

$$\text{where} \quad \beta_i = \frac{\text{Cov}(R_i, R_M)}{\text{Var}(R_M)}$$

Cost of Capital in Segmented vs. Integrated Markets

If capital markets are segmented, then investors can only invest domestically. This means that the market portfolio (M) in the CAPM formula would be the domestic portfolio instead of the world portfolio.

$$\overline{R}_i = R_f + \beta_i^{US}(\overline{R}_{US} - R_f)$$

versus

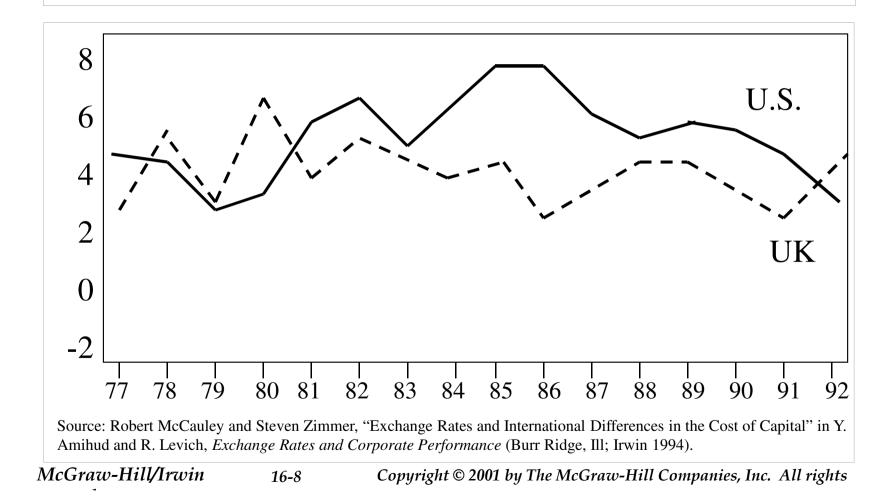$$\overline{R}_i = R_f + \beta_i^{W}(\overline{R}_W - R_f)$$

Clearly integration or segmentation of international financial markets has major implications for determining the cost of capital.

Does the Cost of Capital Differ among Countries?

- There do appear to be differences in the cost of capital in different countries.

- When markets are imperfect, international financing can lower the firm's cost of capital.

- One way to achieve this is to internationalize the firm's ownership structure.

Real After-Tax Cost of Funds

Source: Robert McCauley and Steven Zimmer, "Exchange Rates and International Differences in the Cost of Capital" in Y. Amihud and R. Levich, *Exchange Rates and Corporate Performance* (Burr Ridge, Ill; Irwin 1994).

Cross-Border Listings of Stocks

- Cross-border listings of stocks have become quite popular among major corporations.

- The largest contingent of foreign stocks are listed on the London Stock Exchange.

- U.S. exchanges attracted the next largest contingent of foreign stocks.

Cross-Border Listings of Stocks

Cross-border listings of stocks benefit a company in the following ways.

1. The company can expand its potential investor base, which will lead to a higher stock price and lower cost of capital.

2. Cross-listing creates a secondary market for the company's shares, which facilitates raising new capital in foreign markets.

3. Cross-listing can enhance the liquidity of the company's stock.

4. Cross-listing enhances the visibility of the company's name and its products in foreign marketplaces.

Cross-Border Listings of Stocks

Cross-border listings of stocks do carry costs.

1. It can be costly to meet the disclosure and listing requirements imposed by the foreign exchange and regulatory authorities.

2. Once a company's stock is traded in overseas markets, there can be volatility spillover from these markets.

3. Once a company's stock is make available to foreigners, they might acquire a controlling interest and challenge the domestic control of the company.

Cross-Border Listings of Stocks

On average, cross-border listings of stocks appears to be a profitable decision.

The benefits outweigh the costs.

Capital Asset Pricing Under Cross-Listings

Recall the definition of beta: $\beta_i = \dfrac{\text{Cov}(R_i, R_M)}{\text{Var}(R_M)}$

We can recalibrate the CAPM formula

$$\overline{R}_i = R_f + \beta_i(\overline{R}_M - R_f)$$

As:

$$\overline{R}_i = R_f + (\overline{R}_M - R_f)\dfrac{\text{Cov}(R_i, R_M)}{\text{Var}(R_M)}$$

Capital Asset Pricing Under Cross-Listings

$$\overline{R}_i = R_f + (\overline{R}_M - R_f)\frac{\text{Cov}(R_i, R_M)}{\text{Var}(R_M)}$$

We can develop a measure of aggregate risk aversion, A^M

$$A^M M = \frac{(\overline{R}_M - R_f)}{\text{Var}(R_M)}$$

We can restate the CAPM using A^M

$$\overline{R}_i = R_f + A^M M \text{Cov}(R_i, R_M)$$

Capital Asset Pricing Under Cross-Listings

$$\overline{R}_i = R_f + A^M M \operatorname{Cov}(R_i, R_M)$$

This equation indicates that, given investors' aggregate risk-aversion measure, the expected rate of return on an asset increases as the asset's covariance with the market portfolio increases.

In fully integrated capital markets, each asset will be priced according to the *world* systematic risk.

$$\overline{R}_i = R_f + A^W W \operatorname{Cov}(R_i, R_W)$$

Capital Asset Pricing Under Cross-Listings

$$\overline{R}_i = R_f + A^W W \operatorname{Cov}(R_i, R_W)$$

The International Asset Pricing Model (IAPM) above has a number of implications.

International listing of assets in otherwise segmented markets directly integrates international capital markets by making these assets tradable.

Firms with nontradable assets essentially get a free ride from firms with tradable assets in the sense that the former indirectly benefit from international integration in terms of a lower cost of capital.

The Effect of Foreign Equity Ownership Restrictions

- While companies have incentives to internationalize their ownership structure to lower the cost of capital and increase market share, they may be concerned with the possible loss of corporate control to foreigners.

- In some countries, there are legal restrictions on the percentage of a firm that foreigners can own.

- These restrictions are imposed as a means of ensuring domestic control of local firms.

The Financial Structure of Subsidiaries.

- There are three different approaches to determining the subsidiary's financial structure.

1. Conform to the parent company's norm.

2. Conform to the local norm of the country where the subsidiary operates.

3. Vary judiciously to capitalize on opportunities to lower taxes, reduce financing costs and risk, and take advantage of various market imperfections.

The Financial Structure of Subsidiaries.

- In addition to taxes, political risk should be given due consideration in the choice of a subsidiary's financial structure.

End Chapter Sixteen