Global Cost and Availability of Capital

Eiteman et al., Chapter 11

Winter 2004
Global Cost and Availability of Capital

How can firms tap global capital markets?

Why should they do so?

To minimize their cost of capital?

To maximize the availability of capital?
Global Cost and Availability of Capital

Global integration of capital markets has given firms access to new and cheaper sources of funds. This has encouraged the undertaking of more long-term projects and induced firms to invest more in capital improvement.

Sourcing funds globally may enhance the possibilities of firms residing in countries with illiquid and/or segmented capital markets.
Global Cost and Availability of Capital

Whether and how a firm can raise funds globally depends on its specific characteristics and on the liquidity of the market for its shares.

Raising funds from abroad may be a solution to some of the firm’s problems in terms of reducing its cost of borrowing or its cost of equity but it may also be well perceived due to the higher visibility provided by a presence in more than one market.
Illiquid Markets

Firms that source long-term debt and equity in highly illiquid markets face a relatively high cost of capital. Availability of capital may also be a problem, and thus these firms are disadvantaged vis-à-vis their international competitors.

It may also be advantageous for firms residing in countries with small capital markets to source funds in the more liquid international markets.
Another problem affecting the cost of capital is market segmentation.

A capital market is referred to as segmented when the return required by its investors differs from the return required by investors in other markets where similar securities are traded.

It will also be advantageous for firms in this situation to seek funds in international capital markets.
The Weighted Average Cost of Capital

A firm’s weighted average cost of capital (WACC) is given by

\[ \text{WACC} = \frac{E}{E + D} \times k_e + \frac{D}{E + D} \times (1 - t)k_d, \]

where \( E \) and \( D \) are the market values of firm’s equity and debt, respectively, \( k_e \) and \( k_d \) are the firm’s costs of equity and debt, respectively, and \( t \) is the corporate tax rate.
The Cost of Equity Capital

The CAPM is often used to estimate the cost of equity capital:

\[ k_e = k_{rf} + \beta (k_m - k_{rf}) , \]

where \( k_{rf} \) is the risk-free rate of return, \( k_m \) is the return on the market portfolio and \( \beta \) measures the systematic risk of the firm’s stock.
What is $k_{rf}$? Firms usually use the return on government securities with maturities that match the firm’s average investment horizon.

For firm $i$, $\beta_i$ is given by

$$\beta_i = \frac{\text{cov}(k_{ei}, k_m)}{\text{var}(k_m)} = \frac{\rho_{im}\sigma_i\sigma_m}{\sigma_m^2} = \frac{\rho_{im}\sigma_i}{\sigma_m},$$

where $\rho_{im}$ is the correlation of stock $i$’s return with the market portfolio return, $\sigma_i$ is the standard deviation of stock $i$’s return, and $\sigma_m$ is the standard deviation of the market portfolio’s return.
The Cost of Equity Capital

What is the risk premium $k_m - k_{rf}$?

- Must be forward-looking.
- Past data is often used to calculate it.
- Arithmetic or geometric average of past risk premia. Arithmetic mean captures volatility in markets, which is why most practitioners prefer it.
The Cost of Debt

The firm’s cost of debt should reflect the yield on the company’s actual debt.

Flotation costs could also be taken into account.

Since interest payments are tax deductible, the after-tax cost of debt is used in WACC calculations.
Suppose $k_{rf} = 3.3\% \equiv$ average yield on Swiss gov. bonds; $k_{sm} - k_{rf} = 6.9\% \equiv$ domestic (Switzerland) risk premium; $\beta^s = 0.885 \equiv$ Nestlé’s beta w.r.t. a Swiss index.

The return required on Nestlé’s stock by an investor who only invests in Swiss equities can be approximated by

$$k^s_e = k_{rf} + \beta^s(k_{sm} - k_{rf})$$

$$= 3.3\% + 0.885 \times 6.9\% = 9.407\%.$$
Nestlé’s WACC

Suppose $k_{rf} = 3.3\% \equiv$ average yield on Swiss gov. bonds;
$k_m^g - k_{rf} = 8.4\% \equiv$ global risk premium;
$\beta^g = 0.585 \equiv$ Nestlé’s beta w.r.t. a global index.

The return required on Nestlé’s stock by an investor who invests globally can be approximated by

$$k_e^g = k_{rf} + \beta^g (k_m^g - k_{rf})$$

$$= 3.3\% + 0.585 \times 8.4\% = 8.214\%.$$
Nestlé’s WACC

Let $\frac{E}{E+D} = .65$, $k_d = 4\%$ and $t_c = .2$. Then

$$WACC^s = .65 \times 9.407\% + .35 \times .8 \times 4\% = 7.235\%$$

$$WACC^g = .65 \times 8.214\% + .35 \times .8 \times 4\% = 6.459\%$$
International portfolio investment and cross-listing of equity shares have become common over the past three decades.

An investor willing to maximize the return of a portfolio for a given level of risk is better off with an international portfolio than with a domestic portfolio since the former offers smaller systematic risk.
The Role of International Portfolio Investors

How to reduce risk with an international portfolio depends on the regulations in each country.

It may be possible that only one asset be available to international investors in order to get exposed to the market risk of a specific country.
WACC calculations assume that debt and equity capital are always available at the same required rate of return even for larger capital budgets.

This assumption is correct for firms in highly liquid markets but is not correct for firm in illiquid or segmented markets.
Improving Market Liquidity

There is no clear measure of liquidity but in a liquid market,

- round trips in a stock (simultaneous purchase and sale) are not too costly,

- firms can issue equity without depressing too much the existing stock price.
Improving Market Liquidity

The marginal cost of capital of a firm in an illiquid market may rise very quickly, thus limiting the projects that can be undertaken.

Assuming that firms preserve their optimal financial structure, access to international financial markets improves the situation of firms in illiquid markets by reducing the speed at which the marginal cost of capital increases.
Market Segmentation

A firm’s domestic capital market may be segmented because it lacks efficiency. This may be due to

- government interventions;
- asymmetric information;
- high transaction costs;
- political and foreign exchange risks;
- investors’ perceptions.
Access to international financial markets by a firm in a segmented market will correct the misperception about the firm’s risk and will reduce the firm’s cost of capital at any budget level.

See exhibit 11.6
Novo is a multinational firm that produces industrial enzymes and pharmaceuticals.

In 1977, Novo decided to internationalize its capital structure, as it considered the Danish securities market as illiquid and segmented.

Novo’s cost of capital was significantly higher than its main multinational competitors.

Novo’s P/E ratio was 5 whereas most of its international competitors had P/E ratios well over 10.
Illustrative Case: Novo Industri A/S

Explanations for the Danish equity market’s segmentation:

- Asymmetric information
- Taxation
- Feasible sets of portfolios
- Financial, foreign exchange and political risks
Illustrative Case: Novo Industri A/S

Asymmetric Information

- Securities regulations were such that Danish investors could not buy private foreign securities, and thus would not follow foreign securities developments.

- Foreign securities firms did not locate offices in Denmark since they had nothing to sell, so foreign investors had very little information about Danish firms.
Illustrative Case: Novo Industri A/S

Taxation

- Until July 1981, capital gains were taxed at a 50% rate if holding period was over 2 years and at the holder’s personal income tax rate if holding period was below 2 years, the top marginal rate being 75%.

- Capital gains on bonds, on the other hand, were tax-free.
Illustrative Case: Novo Industri A/S

Financial, Foreign Exchange and Political Risk

- Danish typical debt ratio was 65%.
- Foreign exchange risk was not seen as a big problem.
- Denmark’s economy was considered stable, although national debt was relatively high.
Novo: The Road to Internationalization

- Increased level of disclosure both in Danish and English.
- 1978: $20 million convertible Eurobond issue ($P \downarrow$) and shares were listed on the London Stock Exchange.
- 1980: Seminar in New York ($P \uparrow$).
- 1981: Equity issue in the U.S.
The full extent of the Danish market’s segmentation can be seen by investors’ reaction to the U.S. issue.

At the announcement, the stock price fell in Denmark due to the fear of dilution.

When trading started in New York, the stock price increased.
MNE’s Cost of Capital Compared to Domestic Firms

International availability of capital to MNE or the possibility for large firms to attract international investors may lower the cost of equity and debt.

Marginal cost of capital for such firms should be approximately constant.

These firms should be able to maintain their optimal debt ratio.

Agency costs, political and foreign exchange risks, however, are higher for MNEs.
Recent empirical studies have shown that

- U.S.-based MNEs’ WACC is generally higher than their domestic counterparts.
- U.S.-based MNEs’ debt ratios are lower than their domestic counterparts.
- U.S.-based MNEs’ have higher systematic risk than their domestic counterparts.