THE COST OF CAPITAL FOR FOREIGN INVESTMENTS

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I. THE COST OF EQUITY CAPITAL

   A. Definition

      1. the minimum (required) rate of return necessary to induce investors to buy or hold the firm's stock.

      2. used to value future equity cash flows

      3. determines common stock price

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B. Capital Asset Pricing Model (CAPM) Formula

$$r_i = r_f + B_i (r_m - r_f)$$

where r_i = the equity required rate

r_f = the risk free return rate

B_i = Cov(r_m, r_i)/ $\sigma^2 r_m$ where Cov(r_m, r_i) is the covariance between asset and market returns and $\sigma^2 r_m$, the variance of market returns.

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II. THE WEIGHTED AVERAGE COST OF CAPITAL FOR FOREIGN PROJECTS

A. Weighted Average Cost of Capital (WACC = k_0) Formula

$$k_0 = (1-L) k_e + L i_d (1 - t)$$

where L = the parent's debt ratio

$i_d (1 - t)$ = the after-tax debt cost

k_e = the equity cost of capital

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k_0 is used as the discount rate in the calculation of Net Present Value.

2. Two Caveats

    a. Weights must be a proportion using market, not book value.

    b. Calculating WACC, weights must be marginal reflecting future debt structure.

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B.   Costing Various Sources of Funds

1. Components of a New Investment (I)

$$I = P + E_f + D_f$$

where   I = require subsidiary
            financing

            P = dollars by parent

            E_f = subsidiary's retained
            earnings

            D_f = dollars from debt

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2. First compute each component

    a.   Parent's company funds (k_0) required rate equal to the marginal cost of capital

    b.   Retained Earnings (k_s) a function of dividends, withholding taxes, tax deferral, and transfer costs.

$$k_s = k_e(1-T)$$

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c. Local Currency Debt (r_f)

after-tax dollar cost of borrowing

locally

C. Computing WACC(k_1)

$$k_1 = k_0 - a(k_e - k_s) - b[\ i_d(1-t) - i_f\ ]$$

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III. THE ALL-EQUITY COST OF CAPITAL FOR FOREIGN PROJECTS

A. WACC sometimes awkward

1. To go from the parent to the project

2. Solution: Use all equity discount rate

3. To calculate:

$$k^* = r_f + B^*(r_m - r_f)$$

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4. B^* is the all-equity beta associated with the unleveraged cash flows.

5. Unlevering beta obtained by

$$B^* = \frac{B_e}{1 + (1-t)D/E}$$

where B^* = the firm's stock price beta

D/E = the debt to equity ratio

t = the firm's marginal tax

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IV. DISCOUNT RATES FOR FOREIGN PROJECTS

A. Systematic Risk

   1. Not diversifiable
   2. Foreign projects in non-synchronous economies should be less correlated with domestic markets.
   3. Paradox: LDCs have greater political risk but offer higher probability of diversification benefits.

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B. Key Issues in Estimating Foreign Project

Betas

-find firms publicly traded that share

similar risk characteristics

-use the average beta as a proxy

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1. Three Issues:

   a. Should proxies be U.S. or local companies?

   b. Which is the relevant base portfolio to use?

   c. Should the market risk premium be based on U.S. or local market?

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2. Proxy Companies

    a. Most desirable to use local firms

    b. Alternative:

        find a proxy industry in the local market

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3. Relevant Base (Market) Portfolio

   a. If capital markets are globally integrated, choose world mkt.

   b. If not, domestic portfolio is best

4. Relevant Market Risk Premium

   a. Use the U.S. portfolio

   b. Foreign project: should have no higher than domestic risk and cost of capital.

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V.   ESTABLISHING A WORLDWIDE CAPITAL STRUCTURE

A. MNC Advantage

uses more debt due to diversification

B. What is proper capital structure?
1.   Borrowing in local currency helps to reduce exchange rate risk
2.   Allow subsidiary to exceed parent capitalization norm if local mkt. has lower costs.

CAPITAL BUDGETING FOR THE MULTINATIONAL CORPORATION

CAPITAL BUDGETING FOR THE MULTINATIONAL CORPORATION

I. BASICS OF CAPITAL BUDGETING

A. Basic Criterion: Net Present Value

B. Net Present Value Technique:

    1. Definition

      The present value of future cash flows, discounted at the project's cost of capital less the initial net cash outlay.

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2. NPV Formula:

$$NPV = -I_0 + \sum_{t=1}^{n} \frac{X_t}{(1+k)^t}$$

where

I_0 = initial cash outlay

X_t = net cash flow at t

k = cost of capital

n = investment horizon

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3. Most important property of NPV technique:

   -focus on cash flows with respect to shareholder wealth

4. NPV obeys value additive principle:

   - the NPV of a set of projects is the sum of the individual project NPV

CAPITAL BUDGETING FOR THE MULTINATIONAL CORPORATION

C. International Cash Flows

   1.   Important principle when estimating: Incremental basis

   2.   Distinguish total from incremental flows to account for

       a.   cannibalization

       b.   sales creation

       c.   opportunity cost

       d.   transfer pricing

       e.   fees and royalties

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3. Getting the base case correct

   Rule of thumb:

Incremental cash flows	=	Global corporate cash flow with project	−	Global flow without project

4. Intangible Benefits

   a. Valuable learning experience

   b. Broader knowledge base

CAPITAL BUDGETING FOR THE MULTINATIONAL CORPORATION

II. TWO ISSUES IN FOREIGN INVESTMENT ANALYSIS

   A. Issue #1 Parent v. Project Cash Flow

      -the cash flows from the project may differ from those remitted to the parent

      1. Relevant cash flows become quite important

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2.   Three Stage Approach

   -to simplify project evaluation

   a. compute subsidiary's project
        cash flows

   b. evaluate the project to the
        parent

   c. incorporate the indirect effects

CAPITAL BUDGETING FOR THE MULTINATIONAL CORPORATION

3. Estimating Incremental Project Flows

    What is the true profitability of the project?

    a.   Adjust for tax effects of

        1.)   transfer pricing

        2.)   fees and royalties

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4. Tax Factors:

   determine the amount and timing of taxes paid on foreign-source income.

B. Issue #2 How to adjust for increased economic and political risk of project?

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1. Three Methods for Economic/Political Risk Adjustments:

    a. Shortening minimum payback period

    b. Raising required rate of return

    c. Adjusting cash flows

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2. Accounting for Exchange Rate and Price Changes (inflationary)

   Two stage procedure:

   a. Convert nominal foreign cash flows into home currency terms

   b. Discount home currency flows at domestic required rate of return.