Chapter 14

Multinational Capital Budgeting

Capital Budgeting

Capital budgeting involves the allocation of scarce resources (capital and management skills) to its most efficient use, thereby maximizing returns to investors

In multinational capital budgeting we go a step further to analyze projects that are located beyond national boundaries to identify those that utilize our limited resources most efficiently

Chapter Objectives

- To compare capital budgeting analysis of an MNC's subsidiary with that of its parent;

- To demonstrate how multinational capital budgeting can be applied to determine whether an international project should be implemented; and

- To explain how the risk of international projects can be assessed.

Subsidiary versus Parent Perspective

- Should the capital budgeting for a multi-national project be conducted from the viewpoint of the subsidiary that will administer the project, or the parent that will finance the project?

- The results can vary with the perspective taken because the net after-tax cash inflows to the parent can differ substantially from those to the subsidiary.

Subsidiary versus Parent Perspective

- Net cash flow differences can be due to:

    - **Tax differentials**

        Tax rate on remitted funds

    - **Regulations that restrict remittances**

    - **Minimizing remittance payments**

        The parent may charge its subsidiary high administrative fees.

    - **Exchange rate movements**

Remitting Subsidiary Earnings to the Parent
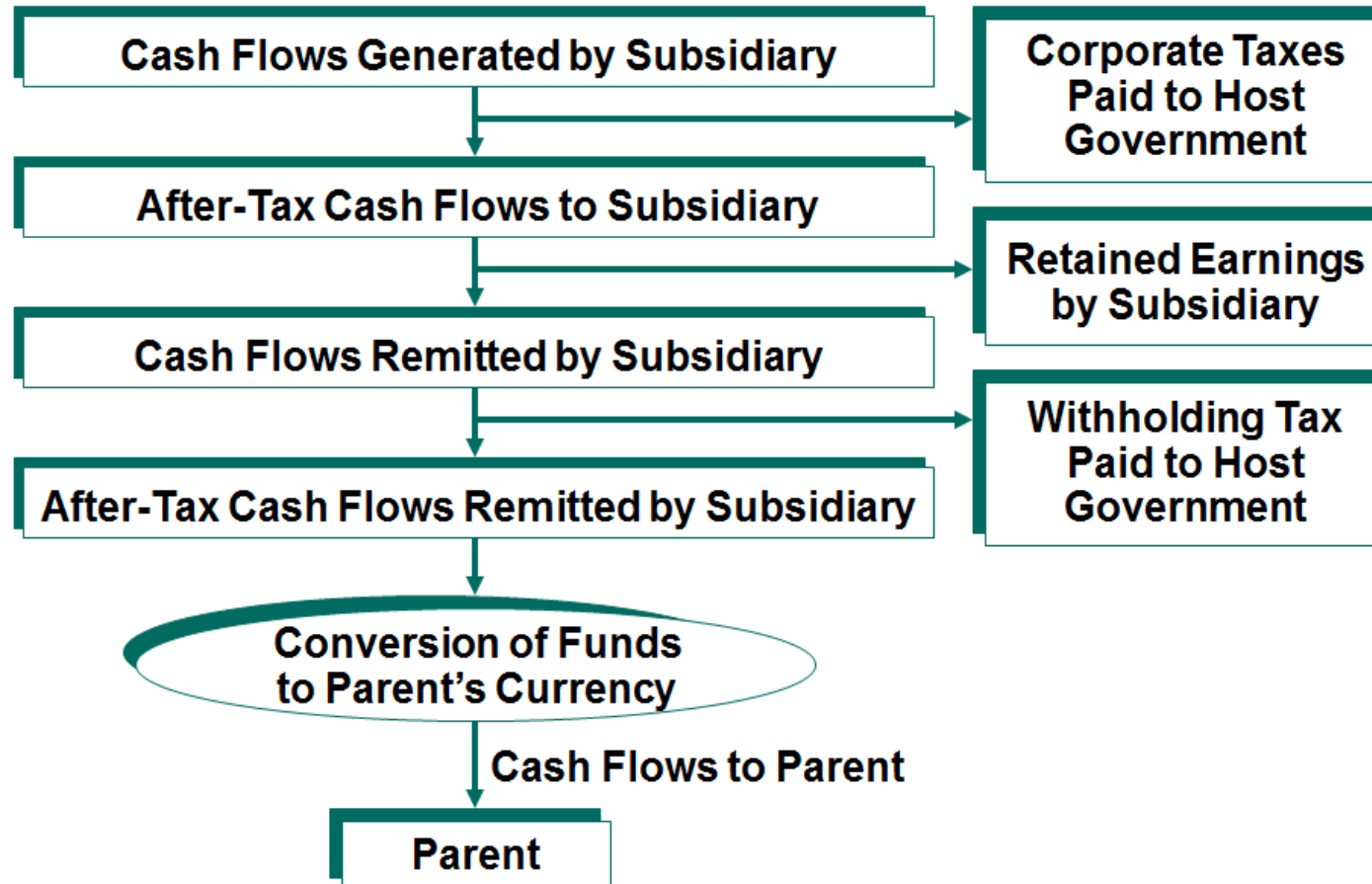
Subsidiary versus Parent Perspective

- A parent's perspective is appropriate when evaluating a project, since any project that can create a positive net present value for the parent should enhance the firm's value.

- However, one exception to this rule occurs when the foreign subsidiary is not wholly owned by the parent.

Input for Multinational Capital Budgeting

The following forecasts are usually required:

1. Initial capital investment
2. Consumer demand over time
3. Product price over time
4. Variable cost over time
5. Fixed cost over time
6. Project lifetime
7. Salvage (liquidation) value

Input for Multinational Capital Budgeting

8. Restrictions on fund transfers
9. Tax payments and credits
10. Exchange rate forecast
11. Required rate of return

Multinational Capital Budgeting

- Capital budgeting is necessary for all long-term projects that deserve consideration.

- Analysis involves estimating annual cash flows and salvage value to be received by the parent, and then computing the net present value (NPV) of the project.

Multinational Capital Budgeting

- NPV $= -$ initial outlay

$$+ \sum_{t=1}^{n} \frac{\text{cash flow in period } t}{(1 + k)^t}$$

$$+ \frac{\text{salvage value}}{(1 + k)^n}$$

k = the required rate of return on the project
n = project lifetime

- If NPV > 0, the project can be accepted.

Multinational Capital Budgeting

Example:

- Spartan, Inc. is considering the development of a subsidiary in Singapore that will manufacture and sell tennis rackets locally.

Capital Budgeting Analysis: Spartan, Inc.

	Year 0	Year 1	Year 2	Year 3	Year 4
1. Demand		60,000	60,000	100,000	100,000
2. Price per unit		S$350	S$350	S$360	S$380
3. Total revenue = (1) × (2)		S$21,000,000	S$21,000,000	S$36,000,000	S$38,000,000
4. Variable cost per unit		S$200	S$200	S$250	S$260
5. Total variable cost = (1) × (4)		S$12,000,000	S$12,000,000	S$25,000,000	S$26,000,000
6. Annual lease expense		S$1,000,000	S$1,000,000	S$1,000,000	S$1,000,000
7. Other fixed annual expenses		S$1,000,000	S$1,000,000	S$1,000,000	S$1,000,000
8. Noncash expense (depreciation)		S$2,000,000	S$2,000,000	S$2,000,000	S$2,000,000
9. Total expenses = (5) + (6) + (7) + (8)		S$16,000,000	S$16,000,000	S$29,000,000	S$30,000,000
10. Before-tax earnings of subsidiary = (3) − (9)		S$5,000,000	S$5,000,000	S$7,000,000	S$8,000,000
11. Host government tax (20%)		S$1,000,000	S$1,000,000	S$1,400,000	S$1,600,000
12. After-tax earnings of subsidiary		S$4,000,000	S$4,000,000	S$5,600,000	S$6,400,000
13. Net cash flow to subsidiary = (12) + (8)		S$6,000,000	S$6,000,000	S$7,600,000	S$8,400,000

Capital Budgeting Analysis: Spartan, Inc.

	Year 0	Year 1	Year 2	Year 3	Year 4
14. S$ remitted by subsidiary (100% of net cash flow)		S$6,000,000	S$6,000,000	S$7,600,000	S$8,400,000
15. Withholding tax on remitted funds (10%)		S$600,000	S$600,000	S$760,000	S$840,000
16. S$ remitted after withholding taxes		S$5,400,000	S$5,400,000	S$6,840,000	S$7,560,000
17. Salvage value					S$12,000,000
18. Exchange rate of S$		$.50	$.50	$.50	$.50
19. Cash flows to parent		$2,700,000	$2,700,000	$3,420,000	$9,780,000
20. PV of parent cash flows (15% discount rate)		$2,347,826	$2,041,588	$2,248,706	$5,591,747
21. Initial investment by parent	$10,000,000				
22. Cumulative NPV		−$7,652,174	−$5,610,586	−$3,361,880	$2,229,867

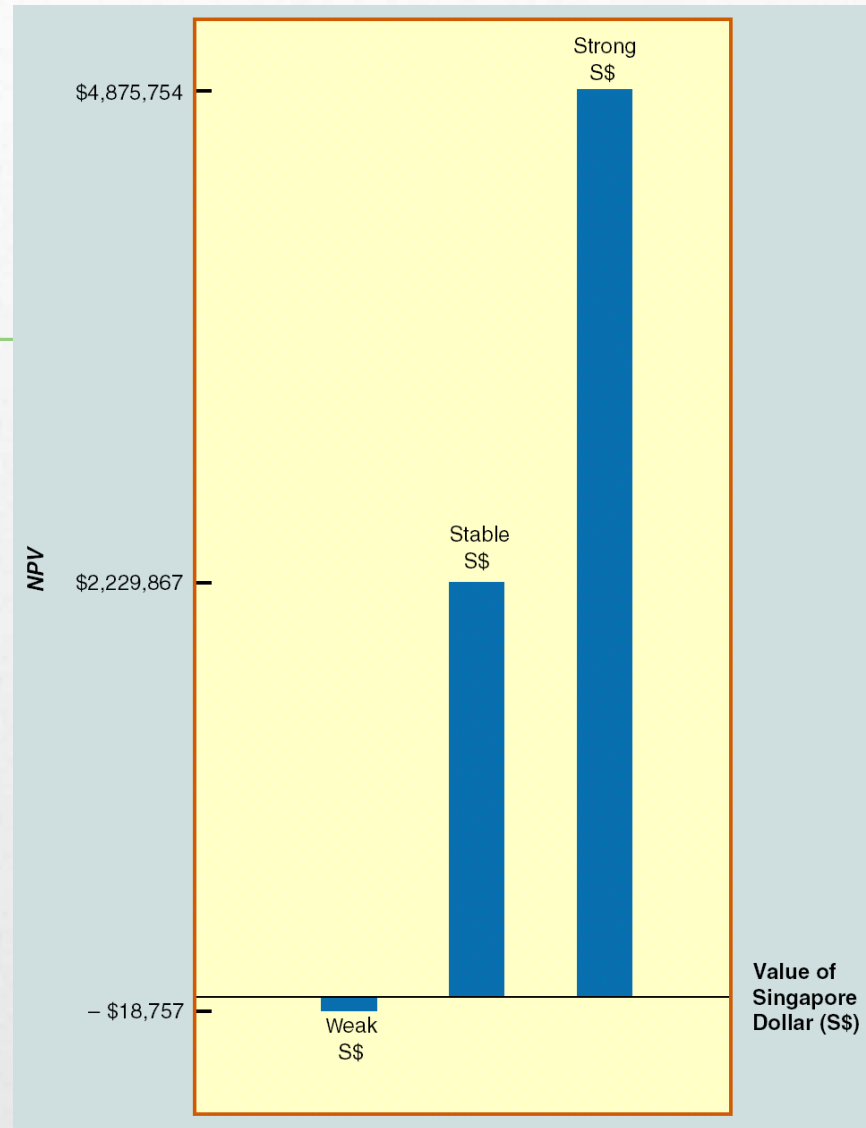# Factors to Consider in Multinational Capital Budgeting

❶ Exchange rate fluctuations

Since it is difficult to accurately forecast exchange rates, different scenarios can be considered together with their probability of occurrence.

Analysis Using Different Exchange Rate Scenarios: Spartan, Inc.

	Year 0	Year 1	Year 2	Year 3	Year 4
S$ remitted after withholding taxes (including salvage value)		S$5,400,000	S$5,400,000	S$6,840,000	S$19,560,000
Strong-S$ Scenario					
Exchange rate of S$		$.54	$.57	$.61	$.65
Cash flows to parent		$2,916,000	$3,078,000	$4,172,400	$12,714,000
PV of cash flows (15% discount rate)		$2,535,652	$2,327,410	$2,743,421	$7,269,271
Initial investment by parent	$10,000,000				
Cumulative *NPV*		−$7,464,348	−$5,136,938	−$2,393,517	$4,875,754
Weak-S$ Scenario					
Exchange rate of S$		$.47	$.45	$.40	$.37
Cash flows to parent		$2,538,000	$2,430,000	$2,736,000	$7,237,200
PV of cash flows (15% discount rate)		$2,206,957	$1,837,429	$1,798,964	$4,137,893
Initial investment by parent	$10,000,000				
Cumulative *NPV*		−$7,793,043	−$5,955,614	−$4,156,650	−$18,757

Sensitivity of the Project's NPV to Different Exchange Rate Scenarios: Spartan, Inc.

Factors to Consider in Multinational Capital Budgeting

❷ Inflation

Although price/cost forecasting implicitly considers inflation, inflation can be quite volatile from year to year for some countries.

Factors to Consider in Multinational Capital Budgeting

❸ Financing arrangement

Financing costs are usually captured by the discount rate.

However, when foreign projects are partially financed by foreign subsidiaries, a more accurate approach is to separate the subsidiary investment and explicitly consider foreign loan payments as cash outflows.

Factors to Consider in Multinational Capital Budgeting

④ Blocked funds

Some countries require that the earnings generated by the subsidiary be reinvested locally for at least a certain period of time before they can be remitted to the parent. But, why?

Capital Budgeting with Blocked Funds: Spartan, Inc.

- Assume that all funds are blocked until the subsidiary is sold.

	Year 0	Year 1	Year 2	Year 3	Year 4
S$ to be remitted by subsidiary		S$6,000,000	S$6,000,000	S$7,600,000	S$8,400,000
					S$7,980,000
S$ accumulated by reinvesting funds to be remitted					S$6,615,000 S$6,945,750 S$29,940,750
Withholding tax (10%)					S$2,994,075
S$ remitted after withholding tax					S$26,946,675
Salvage value					S$12,000,000
Exchange rate					$.50
Cash flows to parent					$19,473,338
PV of parent cash flows (15% discount rate)					$11,133,944
Initial investment by parent	$10,000,000				
Cumulative NPV		−$10,000,000	−$10,000,000	−$10,000,000	$1,133,944

Factors to Consider in Multinational Capital Budgeting

❺ Uncertain salvage value

Since the salvage value typically has a significant impact on the project's NPV, the MNC may want to compute the break-even salvage value.

❻ Impact of project on prevailing cash flows

The new investment may compete with the existing business for the same customers.

Factors to Consider in Multinational Capital Budgeting

7 Host government incentives

These should also be incorporated into the analysis.

8 Real options

Some projects contain real options for additional business opportunities.

The value of such a real option depends on the probability of exercising the option and the resulting NPV.

Adjusting Project Assessment for Risk

- When MNCs are unsure of the estimated cash flows of a proposed project, they need to incorporate an adjustment for this risk.

- One method is to use a risk-adjusted discount rate. The greater the uncertainty, the larger the risk-adjusted discount rate that should be applied to the cash flows.

Adjusting Project Assessment for Risk

- MNCs may also perform sensitivity analysis or simulation using computer software packages for their evaluation.

- Sensitivity analysis involves considering alternative estimates for the input variables, while simulation involves repeating the analysis many times using input values randomly drawn from their respective probability distributions.