**Acmegrade Finance Project No. 4**

**Forex Management**

**Case Study - Premier Computers, Inc.**

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*Solution* >> Explanation Part -

1. **Rupees cash flows of theproject-**

**Step 1 –** Determine the inflows and outflows as their difference would give

cashflow.

1. Inflows: Revenue

b) Outflows / Expenses: Operating Expenses, Depreciation (Non-cash expense), Interest,

DebtRepayment and Tax

**Step 2 –** Calculate the Indian rupee values of inflows and outflows.

Revenue –

* Exchange rate: Rs. 45/$1
* Initial sales volume: 20,000 units, growing at 10% per year
* Selling price: $500 per computer
* Revenue in rupees = sales volume \* selling price \* exchange rate
* Sales volume for successive year = sales volume of preceding year\* (1 + growth rate)

Operating Expenses –

* Exchange rate: Rs. 45/$1
* Initial sales volume: 20,000 units, growing at 10% per year
* Operating expenses: $250 per computer
* Operating expenses in rupees = sales volume \* operating expenses \* exchange rate
* Sales volume for successive year = sales volume of preceding year \* (1 + growth rate)

Depreciation –

* Plant cost = $10 million
* Annual depreciation = (Plant cost in rupees) / 5 years
* Plant cost in rupees = Plant cost \* exchange rate

Interest & Debt Repayment–

* Interest rate = 10%
* Investment = Initial Investment (Plant) + Initial Working Capital
* Debt-Equity ratio = Plant cost \* exchange rate
* Repayment – 4 instalments
* Principle / Debt = (Investment \* Exchange rate) \* (Debt-Equity ratio / [ 1 + Debt-Equity ratio)
* Principle for successive year =Principle – Repayment
* Repayment = Principle / 4
* Interest = principle \* Interest rate

Tax –

* Corporate tax rate (India) = 35%
* EBT = Revenue – [Operating Expenses + Depreciation + Interest]
* Tax amount = EBIT \* Corporate tax rate

**Step 3 –** Calculate Cashflow:

* Earnings Before Tax (EBT) = Revenue – [Operating Expenses +

Depreciation + Interest]

* Profit after Tax (PAT) = EBT – Tax
* Cashflow = PAT + Depreciation - Debt Repayment
* Additional cashflow at the end = Working capital in rupees + Plant

sale value (Depreciation)

* Total cashflow = Cashflow + Additional cashflow at the end

1. **Calculation of Indian rupee cost of capital and US dollar cost of capital -**

***Assumptions:***

1. *The asset beta provided is assumed to be the equity beta, as we're not given information to unlever and relever the beta.*
2. *We assume that the market risk premium is the same for both US and Indian markets.*
3. *We use the interest rate parity theory to convert the dollar cost of capital to rupee cost of capital, assuming that this theory holds in this case.*
4. *We assume that the cost of debt in US dollars would be the same as in Indian rupees (10%), adjusted for tax benefits.*
5. *We assume that the capital structure (debt-to-equity ratio) remains constant over the project life.*

**Step 1 -** Calculate the cost of equity in US dollars.

* Market risk premium: 8%
* Asset beta for computer manufacturers: 1.25
* Risk-free rate in USA: 6%
* Risk-free rate in India: 9%
* Debt-to-equity ratio: 0.50
* Cost of debt in India: 10%
* Corporate tax rate: 35%
* Cost of equity (US$) = Risk-free rate + Beta \* Market risk premium Cost of equity

**Step 2 -** Calculate the weighted average cost of capital (WACC) in US dollars.

* WACC (US$) = [E/(D+E)] \* Cost of equity + [D/(D+E)] \* Cost of debt \* (1 - Tax rate)
* Where E/(D+E) = 1/(1+0.50) = 2/3, and D/(D+E) = 0.50/(1+0.50) = 1/3

**Step 3 -** Calculate the cost of capital in Indian rupees

* Using interest rate parity theory -

(1 + Rupee cost of capital) = (1 + Dollar cost of capital) \* (1 + Indian risk-free rate) /

(1 + US risk-free rate)

* Rupee cost of capital =(1 + Rupee cost of capital) - 1

1. **Calculation of Net Present Value(NPV) in rupees -**

**Step 1 -** Recall the key information:

* Rupee Cost of Capital as discount rate: 16.027% (we'll round this to 16% as

instructed)

* Initial Investment: Rs. 675,000,000 (15 million USD \* 45 Rs/USD)
* Cash flows:

Year 0: -Rs. 675,000,000 (initial investment)

Year 1: Rs. 163,125,000

Year 2: Rs. 125,156,250

Year 3: Rs. 144,900,000

Year 4: Rs. 166,252,500

Year 5: Rs. 504,374,625 (including working capital recovery and plant sale value)

**Step 2 –** Calculate present value factor (PVF).

PVF = 1 / [(1 + discount rate) ^ nth year]

**Step 3 –** Calculate present value of cash inflows and their sum.

Present value of cash inflows = cash inflow \* PVF

**Step 4 –** Calculate NPV.

NPV = Sum of present value of cash inflows - Initial Investment (Cash Outflow)

**Step 5 –** Evaluate the result.

* The calculated NPV is -Rs. 16,573,122, rounded to the nearest rupee.
* This negative NPV suggests that, based on these projections and the given

discount rate, the project is not financially viable.