

International capital budgeting



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Executive Summary

In today's competitive environment, with companies are looking to expand their business not only nationally but also in foreign markets. For taking the decision on whether to invest in a foreign operation or not the company needs to assess various options it has. Capital Budgeting techniques are used in order to evaluate or compare different proposals. There is a difference in capital budgeting techniques for foreign operations as several factors such as exchange rates, inflation rates, blocked funds, government policies, etc.

The returns arising out of foreign operations are different for the subsidiary company and parent company. Cash Flows should be computed for the investor i. e. the parent company and if the NPV of cash flows after subsequent adjustments comes out to be positive for parent company the investment decision might seem fruitful. Although a positive NPV for subsidiary would also add to the wealth of the corporation but generally parent company's in such instances are a little hesitant to invest. Favourable condition is the one in which both companies have a positive return.

The cost of capital also needs to be estimated correctly by making suitable adjustments. Overall cost of capital should be lowered by having an optimal cost structure within several constraints.

Several Decisions need to be made by the International Finance Manager on whether to expand, postpone or abandon the project in cases of sudden rise or fall in demand. Generally, companies do not wish to abandon the project as entering and leaving market is more costlier than bearing operational loss

for sometime. Careful attention to the demand and other foreign and local government policies come into picture while taking this decision.

Introduction

Many firms around the world carry out business activities in more than one country such firms are known as Multinational Corporations (MNC's). With increase in globalization such activities have been on a rise. Many Indian firms also after the inception of Liberalization, Globalization and Privatization policy have started to raise finances in foreign markets, export goods and services, import goods and services and even invest abroad. However, the fundamentals of financial management do not differ whether the firm is domestic or an International firm i. e. a firm which has significant foreign operations. Although there are a few factors that need to be considered in International firms such as currency denominations, tax and other Government implications, varying accounting standards, barriers to trade and financial flows and political risk.

One of the key factors for firms having their operations in foreign countries is the exchange rate. Exchange rate unlike few years back (1971) where devaluations and revaluations occurred only very rarely has given way to the system of floating exchange rates. In a system of completely floating exchange rates, the relative prices of the currencies are determined entirely by the demand-supply gap. Authorities in such a system do not attempt to influence the rate movements. But such an ideal system does not exist. Governments in all countries attempt to influence the movements of exchange prices either through direct intervention or through a mix of

monetary and fiscal policies as they regard exchange rate as a very important macro-economic variable. Such a system is called dirty float.

Exchange rate directly influences the estimation of budget of a foreign investment. So in order to accurately forecast the budget or profitability of a project it is essential to forecast the exchange rates for future.

Exchange Rates

An exchange represents the price of one currency expressed in terms of another. There are two ways of quoting an exchange rate.

Direct Quote: A type of quote in which exchange rate for a foreign currency is quoted in terms of number of units of local currency that are equal to a single unit of foreign currency. For example when it is said that exchange rate for dollar is Rs 46, it illustrates a direct quote for Dollar.

Indirect Quote: A type of quote in which exchange rate for a foreign currency is quoted in terms of number of units of foreign currency that are equal to a unit of local currency. For example when it is said that \$0. 0233 is equal to Re. 1, it illustrates an indirect quote for Dollar.

Since 1993, the interbank foreign exchange market in India has been using system of direct quote, prior to that it used a system of indirect quote.

International Standards Organization has developed three letter codes for all currencies that are used by the SWIFT network that affects the inter-bank fund transfers. Codes for a few currencies are:

Spot Rate Quotations

Spot Rate refers to the rate of a foreign exchange contract for immediate delivery. Although it is said to be immediate its settlement is done in two business days after the date of transaction.

A quotation consists of two prices. The first price is the bid price i. e. the price at which the dealer is willing to buy. The second price is the ask price i. e. the price at which the dealer is willing to sell. The difference between the two prices is known as the bid – ask – spread. It reflects the breadth, depth and volatility of the currency market. The spread is generally expressed in percentage terms. For e. g. if USD/INR Spot : 46. 2500/46. 2600, it means that the dealer would buy one US dollar for Rs 46. 2500 and sell one US dollar for Rs 46. 6000. In this the bid – ask – spread is:

Cross Rate Quotations

If the exchange rate between currencies A and B and currencies B and C is known then the exchange rate between currencies A and C can be determined by the following:

$$S(A/C) = S(A/B) \times S(B/C)$$

Forward Rate Quotations

A rate which is fixed today but the settlement for the transactions occurs at some specified date in the future. Banks normally quote forward rates for maturities in the whole calendar months.

For commercial customers it is mentioned in the same way as quotation for spot rate. For e. g.:

USD/INR 3 – Month Forward : 46. 4220/46. 5210

The above statement signifies that after three months bank would buy one dollar for 46. 4220 and sell one dollar for 46. 5210.

However, in the interbank market the forward quotes are given as a pair of swap points which are then added or subtracted from forward quotation. The swap quote only expresses the difference between the spot quote and forward quote. Decimals are not written in swap quotes and are represented as follows:

Conversion of Swap Rate into Outright Rate

Swap rate can be converted into outright rate by adding premium or subtracting the discount from spot rate. If the forward bid rate in points is more than offer rate then the forward rate is at a premium and hence the points are added to the spot rate in order to get outright rate. If the forward bid rate is more than the offer rate in points then the swap points are subtracted from the spot rate. The swap quotation is generally expressed such that the last digit coincides with the same place as the last digit of spot price. So, in USD/INR quote given above, the rate 20/10 would mean INR 0. 0020/INR 0. 0010.

On application of the above rule to the example, the outright forward quotation would be: USD/INR 1 month forward: 46. 5005/46. 5020.

Forward Premiums and Discounts

If the US dollar is costlier in the forward market than in the current market then it is said that it is at a forward premium in relation to Rupee. Similarly if it is cheaper in the forward market it is said to be at a discount in relation to <https://assignbuster.com/international-capital-budgeting/>

Rupee. With two way quotations there is no single unique way of quantifying the premium or discounts. One way commonly used is expressing premium or discount as an annualized percentage deviation from spot rate.

Forward premium(discount) = $(n\text{-day forward rate} - \text{spot rate}) / \text{spot rate} \times 360/n$

n – length of forward contract in number of days

Futures and Options in Foreign Currencies

An alternative to the forward market is the futures market. The currency futures contracts are standardised currency forward contracts in terms of size of the contract and delivery dates.

The difference between forward contracts and futures is that forwards are customized whereas futures are standardized contracts.

International Parity Relationships

In order to have consistent international financial policy a relationship between interest rates, inflation rates and exchange rates needs to be understood. Following theories suffice this purpose:

Covered Interest Arbitrage and Interest Rate Parity

It is an investment strategy whereby an investor buys a financial instrument denominated in a foreign currency and hedges his foreign exchange risk by selling a forward contract in the amount of the proceeds of the investment back into base currency.

Combined effect of such transactions and market pressures result in an equilibrium relationship which is known as interest rate parity (IRP) which

precludes covered interest arbitrage transactions. When IRP exists, the difference between forward rate and the spot rate is enough to offset the difference between interest rates in two currencies. IRP condition states that the home interest rate must be higher or lower than the foreign interest rate by an amount equal to forward discount or premium on home currency. IRP can be stated as follows:

Purchasing Power Parity

According to the concept of purchasing power parity barring the effects of barriers associated with the movement of goods or services across countries, price of each product shall be same in each country, after making the appropriate currency conversions. It is also known as law of one price in economics. For goods which cannot be easily stored or transported law of one price doesn't hold, but for goods like crude oil and gold which can be easily stored and transported there aren't major deviations from law of one price.

A less restrictive form of Purchasing Power Parity is called the relative purchasing power parity which states that the difference in inflation rate between two countries is offset by the change in exchange rate. Relative Purchasing Power Parity can be expressed as follows:

International Capital Budgeting

Once a company has reached a decision to invest abroad the next thing to do is to evaluate various projects/proposals. The evaluation of the long term investment project is known as capital budgeting. The method of capital budgeting is quite similar for both a domestic company and an international company. The difference is that in order to evaluate for an international <https://assignbuster.com/international-capital-budgeting/>

company different aspects need to be taken into account such as computation of cash flow relating to project in viewpoint of both parent and subsidiary, cost of capital, etc.

Evaluation Criteria

An investment proposal can be evaluated using two types of method non-discounting and discounting methods. The non-discounting methods are simple to compute but are not as accurate as discounting methods as they do not take into consideration the time value of money. The focus would mainly be on the discounting methods.

Non-Discounting Methods

Average Accounting Rate of Return: It takes into account profit before interest and tax with respect to investment. The profit is then compared to the required rate of return. A project is acceptable if the mean profit is higher than the required rate of return. The negative aspects of this method are that it is based on accounting income and not on the cash flow; it considers profit before tax and it also ignores the time value of money.

Pay Back Period: It is the number of years required in order to recover the initial investment. This method mainly focuses on early recovery of funds but does not consider the cash flow after the pay back period i. e. it does not take into account the life of the project. The advantage of such non-discounting methods are that they are easy to compute and can be used in the initial stages of project in order to compare which project would be able to recover the investment quicker.

Discounting Methods

Net Present Value: In this approach projects are accepted where the present value of net cash inflow during the life span of project is greater than initial investment. It is computed using.

Choice between different methods

During comparing two proposals sometimes the result of two methods may differ as they rest on different assumptions concerning the reinvestment of funds released from the project. The NPV rule implies reinvestment at a rate equivalent to the required rate of return which is used as the discount rate whereas IRR assumes the funds to be reinvested at IRR. However, in such a case NPV is given preference as there are a few limitations of IRR method. Firstly, where projects of different life span are considered IRR inflates desirability of a short-life project as IRR is a function of both the time involved and size of capital investment. Secondly, IRR remains to be lower on projects with a longer gestation period, even when NPV remains larger because IRR is high in those projects where several benefits accrue in early part of their economic life. Thirdly, there is a possibility of two IRR rates coming for a given NPV as they are computed using a polynomial equation.

Between PI and NPV, NPV is given preference as it represents an absolute value.

Computation of the Cash Flow

The decision to start a new project involves outlay of cash flow in form of investment but in return brings in funds and adds to the firm's stock of wealth in future. Cash Flow can be grouped under three heads:

1. Initial Investment during the period, to
2. Operating cash flow during the period, t_1 to t_n
3. Terminal cash flow or salvage value emerging at the end of the period, t_n .

The following factors should be kept in mind:

- Cash Flow is considered on after – tax basis
- Financing cost is not included despite the fact that capital has a cost because such costs are considered elsewhere while determining project's required rate of return
- Cash flow is computed on an incremental basis and represents the difference between cash flow after the investment and cash flow in absence of investment
- Certain costs do not involve cash flow but involve opportunity cost, such costs are included in the decision process

Parent Unit's Perspective and the Cash Flow

In multinational capital budgeting the question arises whether to compute the cash flow from viewpoint of the parent company or viewpoint of subsidiary company because cash outflow of one could be cash inflow for the other. For e. g. if the subsidiary company gives the parent company a royalty fees then it becomes an inflow for the parent company but it is an outflow for the subsidiary company. It is difficult to take a decision on whether to accept or reject a proposal in such instances. In fact there may be many situations when the disparity in the cash flow between the parent and its subsidiary occurs. For example if the tax rates in home country and foreign country are different disparity in cash flow would arise. It is possible that on account of

lower tax rates in foreign country the after tax cash inflow is large enough to justify the investment proposal. On the other hand high tax rates in the home country might render the investment proposal infeasible from viewpoint of the parent company. The parent company might reject the proposal due to low cash inflow due to exchange control applied by the foreign government, despite the cash flow being sufficient for implementation. In a situation where parent company charges the subsidiary exorbitantly for the use of technology and management, the cash inflow accruing to the parent company will be larger justifying the investment decision. Lastly, changes in exchange rate may change the cash flow of parent company. When the currency of the foreign country appreciates parent company gets a larger flow of cash in terms of its own currency. This might alter the accept-reject decision.

In corporate financial management the value of the project is determined by net present value of the future cash flows available to the investor. Since, parent company is the one which invests in the project, it is the cash flow of the parent company that is taken into account in the context of international capital budgeting.

Initial Investment

If the entire project cost is met by the parent company the entire amount of initial investment is treated as the cash outflow. There are instances when the project is partly financed by the subsidiary itself through local borrowings but such borrowings do not form a part of the initial cash outflow.

In some cases the subsidiary company makes additional investment for expansion out of the retained earnings, in such a case there is no cash outflow from the parent company but such costs should be treated as opportunity costs because in absence of retention of earnings, these funds could have been transferred to parent company rather than invested in the project in question. Thus, the investment out of retained earnings should be treated as cash outflow from parent company's perspective.

Sometimes foreign government imposes exchange control and does not allow the cash to flow to the parent company. Such funds are called as blocked funds. For this reason the part of the cash that is blocked is not treated as cash inflow from the parent's perspective. However, if the blocked funds are reinvested in some new project then that amount is considered as investment by the parent company.

Operating cash flow

Besides the initial investment, some adjustments need to be made to the operating cash flow as well. The revenue generated through the sale of a subsidiary's product in the local market as well as in other countries is shown as cash inflow to the parent company but it is subject to downward adjustment by the lost income on sales previously realized through parent company's export to these markets. On the other hand if operation in the subsidiary leads to import of components and raw material from parent company value of such import will be added to the revenue.

The transfer pricing, when the parent company or any other unit of the firm charges price for intra-firm transfer of intermediate goods, also influences

the operating cash flow. The transfer pricing is adopted either for better working capital management or waiving of taxes through shifting of before-tax profit to a country with lower tax rates. When transfer pricing lowers the overall tax burden on the parent company it is treated as cash inflow. However, such inflows are discounted at a higher rate because they involve great risk.

If there are incentives from the foreign government, they are included in capital budgeting. For example, if foreign government offers loan at a subsidized rate then the gains from such an incentive is treated as operating cash inflow.

When the subsidiary takes loans locally, the amount of interest payment is deducted from operating cash inflow. In case of domestic capital budgeting it is not the case as financing cost is included in the discount rate, but in case of international capital budgeting, the cash remitted to parent company would seem to be overstated if interest payments are not treated as cash outflow.

Inflation influences both the cost and the revenue streams of the project and hence inflation rate differential also needs to be taken into account. If the inflation rate is higher in foreign country and if the import from the parent company constitutes a significant portion of the input of subsidiary, the cost will not move up very high but if the inputs are bought locally the cost increase may be substantial. Similarly, revenue would move up if there is no competition from foreign suppliers and the demand for the product is price inelastic. Although if inflation rates are very fluctuating it becomes very

difficult to make an accurate forecast as the inflation differential would keep on changing.

The exchange rate fluctuation influences the size of the cash flow. Changes in exchange rate are not only due to the changes in inflation rates but several other factors. It is difficult to predict the behaviour of those factors. Nevertheless, the cash flow computation process incorporates different scenarios of exchange rate movements. If there is an appreciation in the value of foreign currency, it is good for the parent company as it will increase the size of cash inflow in terms of home currency. This gain may be offset by the high inflation rate but if in the future the rate of inflation is expected to lower thus helping appreciate the value of foreign country's currency, the subsidiary should invest locally the payments to the parent company till the strengthening of currency.

Terminal Cash Flow

When salvage value of a project is uncertain the parent company makes several estimates of salvage value or terminal cash flow and computes the NPV based on each possible outcome of terminal cash flow. Alternatively, it computes the break even salvage i. e. terminal cash flow necessary in order to achieve zero NPV for the project. Break even salvage value is then compared to estimated cash flow. If the estimated terminal cash flow is less than break even salvage value, the investment proposal would be rejected as the NPV would be negative. On the other hand if the subsidiary would sell for more than break-even salvage value then this would be incorporated into assessment of whether to accept the project or reject it.

To further explain the terminal cash flow, we would break up the cash flow beginning from the first year to the n th year into operating cash flow (OCF_t) and terminal cash flow (TCF_n).

So from the above equation we can conclude that in order to compute break even terminal cash flow we have to first estimate the present value of operating cash flows or the future cash flows without salvage value. When computed it is deducted from initial investment and difference is multiplied by $(1+k)^n$.

Parent-Subsidiary Perspective: An Alternative Approach

In the earlier approach we analyzed that NPV of the investor is taken into account rather than project while deciding on whether to invest in a certain project or not. But if project's NPV is positive, it is bound to add to corporate wealth of firm as a whole. Under this approach two NPV's are computed, one from parent company's point of view and other is the NPV of the project. Finally the acceptance or rejection decision is based on NPV of both of them.

In order to calculate the NPVP or Net Present Value from Parent company's perspective following steps are taken:

1. Estimate the cash flow in foreign currency
2. Estimate the future spot exchange rate on the basis of available forward rates
3. Convert the foreign currency cash flow into home currency
4. Find home currency using home currency discount rate

Similarly to find out NPVS or Net present value from subsidiary's perspective following steps are taken:

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1. Estimate cash flow in foreign currency
2. Identify the foreign currency discount rate
3. Discount the foreign currency cash flow at foreign currency discount rate
4. Convert the resultant NPV into the home country currency at spot exchange rate.

In the above case the cash inflow represents the earnings of the project in foreign currency irrespective of the fact whether cash moves towards or away from the parent unit.

The two methods above assume all-equity capital structure and so, if the parity conditions existed in the real world the two approaches would give the same value. But generally debt is normally included in capital structure in order to lower the cost of capital and furthermore parity conditions do not exist. The possible results could be:

- NPVP and NPVS: both negative and in such a case project is rejected
- NPVP and NPVS: both positive; in such a case project is accepted
- $NPVP > 0 > NPVS$: The project is attractive from parent company's point of view but not from subsidiary company's point of view. In such a case project could be accepted but there are chances of loss in value in terms of foreign currency.
- $NPVP < 0$

Cost of Capital

So far, in evaluating the project the focus has only been on the numerator of NPV equation. The denominator of equation which is known as discount rate

is based on risk adjusted cost of capital and plays a significant role in computing cash flow.

Cost of Equity Shares

Dividend is the cost of equity shares. The computation of cost of equity shares is not so easy as there is no fixed obligation for payment of dividend to equity shareholder. Sometimes the cost of equity is based on historical rate of return. Some companies keep their dividends fixed irrespective of whether they earn a profit or incur loss. The problem with this method though is that it does not embrace expectations about future performance of the firm. Usually, it relies on current value of shares. The price of equity share P , is equal to present value of expected dividend D given the risk adjusted rate k_e required by investors.

$$K_e = D/P_0$$

Since investors expect growing rate of dividend per share.

$$K_e = D/P_0 + g$$

g – Growth factor

International Investment and Cost of Capital

The cost of capital in an MNC is not the same as a domestic company. Since MNC has easy access to international capital market and so it gets fund from least cost source. Importantly an MNC can internationally diversify its sources of funds and so ensure a stable inflow of funds. The subsidiary can also make some borrowings in the foreign country if it finds the cost of capital to be low over there. But in international investment the flow of funds

is highly exposed to exchange rate changes thereby raising the bankruptcy cost and compelling the creditors and shareholders to require a higher rate of return on capital. International operation is also subject to political risk which also requires a higher rate of return on capital. Thus, facts such as mentioned above all need to be considered and incorporated while computing the cost of capital for a multinational firm.

Adjustments to Cost of Capital

Had the capital market been efficient the cost of capital in different countries would be analogous and hence parent company's cost of capital may be used for discounting cash flow from foreign operations without any adjustment. But, in practice it is not the case and hence a few adjustments to the cost of capital are required. If cash flow is discounted at subsidiary level cost of capital obtained in foreign country is used for this purpose. But in cases where the parent unit uses home country cost of capital some adjustments are made.

Firstly, the capital structure in MNC's and domestic firms varies. In MNC firms whose operations are well diversified across countries there would be comparatively more stable cash flow allowing them to handle more debt. On the other hand MNC's which have large profits use more of their retained earnings rather than debt.

The capital structure norms also depend on the rules and regulations in foreign countries. In foreign countries where equity participation is restricted to lower limits, debt: equity ratio is high. Also when the subsidiary is exposed to exchange rate risk a higher debt: equity ratio is desirable. But if

the political risks are high in the foreign country the MNC's depend more on Loan from foreign creditors as they would pressurize the local government to maintain good relations with MNC's. But again if the interest rate i. e. cost of debt is high in foreign countries as could be the case in many developing countries MNC's tend to use more equity capital. Thus, if a MNC invests in various different countries its capital structure would vary in each country which would be different from its global target capital structure. In order to minimize the difference they adopt different norms in different countries, i. e. if in one country they rely more on debt then in the other they rely more on equity. If debt: equity for all countries taken together does not match the parent company's capital structure norms adjustments are made by adding a premium to or making a discount to the parent company's cost of capital.

Secondly, adjustments to parent unit's cost of capital are made keeping in mind the extent to which the subsidiary is able to get funds at a lower cost either from domestic market or international market. If cost is lower than cost of parent unit discount rate needs to be reduced. The discount rate also needs adjustment for inflation. There are various risks such as political, economic or both prevalent in foreign country. The discount rate thus needs an upward revision.

Adjusted Present Value Approach

There is a method for capital budgeting developed by Lessard which is known as adjusted present value technique. It takes into account most of the complexities emerging in the computation of cash flow and in determination of discount rates. Under this technique initial cash flow consists of capital cost of project minus blocked funds (if any). This amount is then converted

into home country currency at spot exchange rate. Similarly, the operating cash flow under the APV technique consists of:

- Present value of after tax cash flow from subsidiary to parent converted into home currency at expected spot rate minus profits on lost sales of parent company
- Present value of tax adjusted depreciation allowances in terms of home currency
- Present value of contribution of project to borrowing capacity in terms of home currency subject to adjustment for taxes
- Face value of loan in host country currency minus present value of repayments converted into home currency
- Present value of expected savings on account of tax deferrals and transfer pricing
- Present value of expected illegal repatriation of income

Terminal cash flow consists of present value of residual plant and equipment. For tax adjustments APV technique takes into account the higher of the home country and foreign country tax rates. This technique is unique in the sense that it uses different discount rates for different types of cash flows. The cash flow on account of sales and other such revenue is discounted at an all-equity cost of capital; depreciation allowances are discounted at nominal rate; contribution of project to borrowing capacity is discounted at a riskless rate and the repayment of loans in foreign country is discounted at nominal interest rate prevalent in the foreign country. Also the rate used for discounting the savings on account of taxes and of transfer pricing and illegal repatriation includes risk premium.

Despite its uniqueness it is found that if complexities are incorporated in cash flow and risk adjusted weighted average cost of capital is taken at the discount rate the value thus obtained doesn't differ much f