

Department of Commerce

University of Calcutta

Study Material

Cum

Lecture Notes

Only for the Students of M.Com. (Semester IV)-2020

University of Calcutta

(Internal Circulation)

Dear Students,

Hope you, your parents and other family members are safe and secured. We are going through a world-wide crisis that seriously affects not only the normal life and economy but also the teaching-learning process of our University and our department is not an exception.

As the lock-down is continuing and it is not possible to reach you face to face class room teaching. Keeping in mind the present situation, our esteemed teachers are trying their level best to reach you through providing study material cum lecture notes of different subjects. This material is not an exhaustive one though it is an indicative so that you can understand different topics of different subjects. We believe that it is not the alternative of direct teaching learning.

It is a gentle request you to circulate this material only to your friends those who are studying in Semester IV (2020).

Stay safe and stay home.

Best wishes.

For

Semester-IV

[Additional Materials]

Series-II

University of Calcutta
M.Com. Semester IV: 2020
Strategic Management
Module 1
(Dr. Bikram Singh)

Chapter 4: Business Level Strategy and Functional Strategy

i. Generic Business Level Strategy - Meaning

A generic business level strategy gives a company a specific form of competitive position and advantage vis-a-vis its rivals that results in above average profitability. 'Generic' means that all companies can potentially pursue these strategies regardless of whether they are manufacturing, service, or non-profit enterprises; they are also generic because they can be pursued across different kinds of industries. [Ref: Hill and Jones (2015)]

ii. Three Approaches to Market Segmentation

Standardization Strategy: When a company decides to ignore different segments, and produce a standardized product for the average consumer.

Segmentation Strategy: When a company decides to serve many segments, or even the entire market, producing different offerings for different segments.

Focus Strategy: When a company decides to serve a limited number of segments, or just one segment. [Ref: Hill and Jones (2015)]

iii. Business Level Strategy: Types

a. Broad Low-Cost Strategy (Cost Leadership)

When a company lowers costs so that it can lower prices and still make a profit it is said to follow broad low-cost strategy.

b. Broad Differentiation Strategy (Differentiation)

When a company differentiates its product in some way, such as by recognizing different segments or offering different products to each segment it is said to follow broad differentiation strategy.

c. Focus Low-Cost Strategy (Focused Cost Leadership)

When a company targets a certain segment or niche, and tries to be the low-cost player in that niche it is said to follow focus low cost strategy.

d. Focus Differentiation Strategy (Focused Differentiation)

When a company targets a certain segment or niche, and customizes its offering to the needs of that particular segment through the addition of features and functions it is said to follow focus differentiation strategy. [Ref: Hill and Jones (2015)]

iv. Business -Level Strategy, Industry and Competitive Advantage

Properly executed, a well-chosen and well-crafted business-level strategy can give a company a competitive advantage over actual and potential rivals. More precisely, it can put the company in an advantageous position relative to each of the competitive forces.

The low-cost enterprise can make profits at price points that its rivals cannot profitably match. This makes it very hard for rivals to enter its market. In other words, the low-cost company can build an entry barrier into its market. It can, in effect, erect an economic moat

around its business that keeps higher-cost rivals out. A low-cost position and the ability to charge low prices and still make profits also give a company protection against substitute goods or services. Low costs can help a company to absorb cost increases that may be passed on downstream by powerful suppliers. Low costs can also enable the company to respond to demands for deep price discounts from powerful buyers and still make money. The low-cost company is often best positioned to survive price rivalry in its industry. Indeed, a low-cost company may deliberately initiate a price war in order to grow volume and drive its weaker rivals out of the industry.

The successful differentiator is also protected against each of the competitive forces. The brand loyalty associated with differentiation can constitute an important entry barrier, protecting the company's market from potential competitors. Because the successful differentiator sells on non-price factors, such as design or customer service, it is also less exposed to pricing pressure from powerful buyers. Indeed, the converse may be the case—the successful differentiator may be able to implement price increases without encountering much, if any, resistance from buyers. The differentiated company can also fairly easy absorb price increases from powerful suppliers and pass those on downstream in the form of higher prices for its offerings, without suffering much, if any, loss in market share. The brand loyalty enjoyed by the differentiated company also gives it protection from substitute goods and service. The differentiated company is protected from intense price rivalry within its industry by its brand loyalty, and by the fact that non-price factors are important to its customer set. At the same time, the differentiated company often does have to invest significant effort and resources in non-price rivalry, such as brand building through marketing campaigns or expensive product development efforts, but to the extent that it is successful, it can reap the benefits of these investments in the form of stable or higher prices. Focused companies often have an advantage over their broad market rivals in the segment or niche that they compete. The same can be true for a differentiated company. By focusing on a niche, and customizing the offering to that segment, a differentiated company can often outsell differentiated rivals that target a broader market. [Ref: Hill and Jones (2015)]

v. Market Segmentation, Costs and Revenues

Different approaches to market segmentation have different implications for costs and revenues. A standardization strategy is typically associated with lower costs than a segmentation strategy. A standardization strategy involves the company producing one basic offering, and trying to attain economies of scale by achieving a high volume of sales. In contrast, a segmentation strategy requires that the company customize its product offering to different segments, producing multiple offerings, one for each segment.

Customization can drive up costs for two reasons; first, the company may sell less of each offering, making it harder to achieve economies of scale, and second, products targeted at segments at the higher-income end of the market may require more functions and features, which can raise the costs of production and delivery. On the other hand, it is important not to lose sight of the fact that advances in production technology, and particularly lean production techniques, have allowed for *mass customization*—that is, the production of more product variety without a large cost penalty. In addition, by designing products that share common components, some manufacturing companies are able to achieve substantial economies of scale in component production, while still producing a variety of end products aimed at different segments. This is an approach adopted by large automobile companies, which try to utilize common components and platforms across a wide range of models. To the extent that

mass customization and component sharing is possible, the cost penalty borne by a company pursuing a segmentation strategy may be limited. Although a standardization strategy may have lower costs than a segmentation strategy, a segmentation strategy does have one big advantage: it allows the company to capture incremental revenues by customizing its offerings to the needs of different groups of consumers, and thus selling more in total. A company pursuing a standardization strategy where the product is aimed at the average consumer may lose sales from customers who desire more functions and features, and are prepared to pay more for that. Similarly, it may lose sales from customers who cannot afford to purchase the average product, but might enter the market if a more basic offering was available.

As for a focus strategy, here the impact on costs and revenues is subtler. Companies that focus on the higher-income or higher-value end of the market will tend to have a higher cost structure for two reasons. First, they will have to add features and functions to their product to appeal to higher-income consumers, and this will raise costs. Second, the relatively limited nature of demand associated with serving just a segment of the market may make it harder to attain economies of scale. Offsetting this, however, is that the customization and exclusivity associated with a strategy of focusing on the high-income end of the market may enable such a firm to charge significantly higher prices than those enterprises pursuing standardization and segmentation strategies. For companies focusing on the lower-income end of the market, or a segment that desires value for money more than they are about price or are less concerned about brands, a different strategy comes into play. Such companies tend to produce a more basic offering that is relatively inexpensive to produce and deliver. This may help them to drive down their cost structures. [Ref: Hill and Jones (2015)]

vi. Generic Business Level Strategy and Strategic Choices

a. Cost Leadership

A company's business model based on cost leadership is based on doing everything it can to lower its cost structure so that it can make/sell goods or services at a lower cost than its competitors. It positions itself on the value creation frontier as close as possible to the lower costs/ lower prices.

A cost leader chooses low to moderate level of product differentiation relative to its competitor. It ignores different market segments and produces products that appeal 'average' customers. Its strategy is based on producing least/smallest number of products desired by the highest number of customers. They have increased efficiency and a reduced cost structure. [Ref: Hill and Jones (2015)]

b. Focused Cost Leadership

Cost Leader is not always a large, national company that targets 'average' customer. Sometimes a company targets one/few market segments and successfully pursues cost leadership by developing right strategies to serve those segments. These companies pursue a business model based on focused cost leadership. Such companies compete against the cost leader in the market segmentation at no cost disadvantage. In doing this focused cost leaders concentrates on small volume custom products and, leaves the large volume standardised

market to the cost leader. Because of no cost disadvantage it operates on the value creation frontier and earns above average profits.

c. Differentiation

A company's business model is based on achieving competitive advantage by creating products that customers perceive as different or distinct in some important way. A differentiator has the ability to satisfy customers' needs in a way that its competitors cannot and is in the position to charge higher prices. Differentiation strategy safeguards a company against competition to the degree that customers develop brand loyalty. However, a differentiator must watch out imitations and be careful that they do not charge higher than the market can bear.

d. Focused Differentiation

A focused differentiator chooses to specialise in serving the needs of one/two market segmentation/niches. Once it has chosen its market segment, a focused company positions itself using differentiation. Focusing on one type of customers/only one segment of product line a focused differentiator is able to reach the value frontier because they are frequently able to develop a differentiated product that better satisfies the needs of customers in particular segment than a differentiator. The focused differentiator does not attempt to serve all market segments because that would bring it into direct competition with the broad differentiator. If the focused differentiator tries to compete with the broad differentiator, it may run into trouble because the broad differentiator has the resources to imitate the focused differentiator's business model. Many companies who started off as focused differentiators have become leading differentiators in their industry either through internal growth or issuing stocks and building debt to raise the capital they needed to expand their business by taking over focused companies and combining their resources. However, focused differentiators must stay close to customers and respond to their needs. If the focuser's niche disappears over time because of technological change/changes in customer's tastes, it cannot move easily to new niches and this can be a major danger. [Ref: Hill and Jones (2015)]

vii. Functional-level Strategy

Functional-level strategies are actions that managers take to improve the efficiency and effectiveness of one or more of value creation activities. A firm can use functional-level strategies to build valuable resources that enable it to attain superior efficiency, quality, innovation, and customer responsiveness. For example, McDonald's has been a standout performer in the fast-food industry. McDonald's was a fast-food *innovator*, developing many of the practices that have become standard in the industry. It was *responsive to customer needs* for inexpensive fast food, good, quick service, and a clean environment. By standardizing the process of making fast food and working closely with its suppliers, McDonald's improved its *efficiency*, thereby lowering costs and prices, while offering a product of *reliable quality* that was the same no matter where it was purchased. In this section we will learn how functional-level strategies can be used to build a sustainable competitive advantage in terms of attaining superior efficiency, quality, innovation, and customer responsiveness.

(I) Achieving Superior efficiency:

One common measure of efficiency is employee productivity. It helps a company attain a competitive advantage through a lower cost structure. Another important measure of efficiency is capital productivity. It refers to the output produced by a dollar of capital invested in the business. In short, measure of efficiency is the quantity of inputs that it takes to produce a given output; that is, $\text{efficiency} = \text{outputs}/\text{inputs}$. A company can take the following steps at the functional level to increase efficiency and lower cost structure at various value creation activities:

- **Economies of scale** are unit cost reductions associated with large-scale output. Another source of scale economy is greater division of labour and specialization. Specialization enables employees to become very skilled at performing a particular task and have a favourable impact on productivity. Managers must know the extent of economies of scale, and where diseconomies of scale begin to occur.
- **Learning effects** are cost savings that result from “learning by doing.” Labour productivity increases over time, and unit costs decrease as individuals learn the most efficient way to perform a particular task. It has been suggested that they are most important during the start-up period of a new process.
- **Experience curve** refers to the systematic lowering of the cost structure, and consequent unit cost reductions that have been observed to occur over the life of a product. The strategic significance of the experience curve is clear: Increasing a company’s product volume and market share will lower its cost structure relative to its rivals.
- **Flexible production technologies** may increase efficiency and lower unit costs by enabling the company to customize its product offering to a much greater extent. The term mass customization has been described as a company’s ability to use flexible manufacturing technology to reconcile low cost and differentiation through product customization.
- The **marketing strategy** that a company adopts can have a major impact on efficiency and cost structure. Marketing strategy refers to the position that a company takes with regard to market segmentation, pricing, promotion, advertising, product design, and distribution. Some of the steps leading to greater efficiency are fairly obvious. For example, moving down the experience curve to achieve a lower cost structure can be facilitated by aggressive pricing, promotions and advertising—all of which are the task of the marketing function. Other aspects of marketing strategy have a less obvious—but no less important impact—on efficiency. One important aspect is the relationship of customer defection rates, cost structure, and unit costs. *Customer defection* is the percentage of a company’s customers who defect every year to competitors. Lowering customer defection rates allows a company to achieve a lower cost structure.
- **Materials management** encompasses the activities necessary to get low cost inputs and components to a production facility and out through a distribution system to the end-user. Improving materials-management function through just-in-time (JIT) approach and managing the flow of inputs, components from suppliers or supply chain management are advisable.

- **R&D function** can boost efficiency by designing products that are easy to manufacture and by pioneering process innovations that can help a company achieve a lower cost structure.
- **Human Resource Strategy** deals with employee productivity and emphasis on two aspects. First, self-managing teams, whose members coordinate their own activities and make their own hiring, training, work, and reward decisions. Second, pay for performance which linked to the ability of the team to meet productivity and quality goals.
- Cost efficiency can also be realized by using **web-based information systems** to automate many internal company activities, from managing expense reimbursements to benefits planning and hiring processes, thereby reducing the need for internal support personnel.
- **Company's infrastructure**- including its organizational structure, culture, style of strategic leadership, and control system—determines the context within which all other value creation activities take place. Appropriate infrastructure can help foster a companywide commitment to efficiency and promote cooperation among different functions in pursuit of efficiency goals.

Strategic leadership is especially important in building a companywide commitment to efficiency. The leadership task is to articulate a vision that recognizes the need for all functions of a company to focus on improving efficiency.

(II) Achieving Superior quality:

A product is said to have superior quality when customers perceive that its attributes provide them with higher utility than the attributes of products sold by rivals. The quality of a product is commonly measured in terms of reliability and excellence. Excellence signifies some important product attributes, such as a product's design and styling, its aesthetic appeal, its features and functions, the level of service associated with delivery of the product, and so on. Reliability develops when it consistently performs the function it was designed for, performs it well, and rarely, if ever, breaks down. A company can take the following steps at the functional level to increase quality at various value creation functions:

(A) Reliability improving mechanism: The principal tool that most managers use to increase the reliability of their product offering is the Six Sigma quality improvement methodology. Improvement in product reliability is a cross-functional process. Its implementation requires close cooperation among all functions in the pursuit of improving quality. These functions in implementing reliability improvement methodologies are summarized:

- At first senior managers agree to a quality improvement program and communicate its importance to the organization.
- If a quality improvement program is to be successful, individuals must be identified to lead the program.

- Quality improvement methodologies advocate the need to identify defects that arise from processes, trace them to their source, find out what caused the defects, and make corrections.
- Quality improvement program emphasise to create a metric that can be used to measure quality.
- Once a metric has been devised, the next step is to set a challenging quality goal and create incentives for reaching it.
- Shop floor employees can be a major source of ideas for improving product quality, so these employees must participate and be incorporated into a quality improvement program.
- A major source of poor-quality finished goods is poor-quality component parts. A company must work with its suppliers to improve the quality of the parts they supply.
- Designing products with fewer parts is often a major component of any quality improvement program.
- Implementing quality improvement methodologies requires organization wide commitment and substantial cooperation among functions.

(B) Excellence improving mechanism: A product is comprised of different attributes like include the form, features, performance, service, durability, reliability and styling of a product. Achieving a perception of being high in the excellence dimension on any of these attributes requires specific actions by managers, which are as follows:

- It is important for managers to collect marketing intelligence indicating which attributes are most important to customers.
- Once the company has identified the attributes that are important to customers, it needs to design its products (and services) in such a way that those attributes are embodied in the product.
- The company must decide which significant attributes to promote and how it creates a consistent image in the minds of customers.
- It must be recognized that competition is not stationary, but instead continually produces improvement in product attributes, and often the development of new-product attributes.

(III) Achieving Superior Innovation:

There are two main types of innovation: product innovation and process innovation. *Product innovation* generates value by creating new products, or enhanced versions of existing products, that customers perceive as having more value, thus increasing the company's pricing options. *Process innovation* is the development of a new process for producing and delivering products to customers. Basically, it allows a company to create more value by lowering production costs. But in reality, the failure rate of innovative products is very high. So, at first, we will try to identify reasons behind failures in the process of innovation, then explore how to minimise failure.

(A) Reasons behind high failure rate in innovation:

- It is impossible to know prior to market introduction whether the new product has tapped an unmet customer need, and if there is sufficient market demand to justify manufacturing the product.

- When there is definite customer demand for a new product, but the product is not well adapted to customer needs because of factors such as poor design and poor quality.
- New products may fail because of poor positioning strategy a company adopts for a product-based upon price, distribution, promotion and advertising, and product features.
- Many new-product introductions fail because companies make the mistake of marketing a technology for which there is not enough demand.
- The more time that elapses between product development and final marketing—the more likely it is that a competitor will beat the company to market and gain a first-mover advantage.
- If a new product is not designed with manufacturing capabilities in mind, it may prove too difficult to build with existing manufacturing technology. In this case both overall development costs and time to market may increase significantly

(B) Reducing failure rate in innovation: Managers can reduce the high failure rate associated with innovation by ensuring tight cross-functional integration among R&D, production, and marketing. The best ways to achieve integration is to establish cross functional product development teams which attributes to the following

- The team leader should be skilled at integrating the perspectives of different functions and facilitate cross-functional cooperation for a common goal.
- The team should be composed of at least one member from each key function or position. They work in proximity to one another to create a sense of camaraderie and facilitate communication.
- The team should have a clear plan and clear goals, particularly with regard to critical development milestones and development budgets.
- Each team needs to develop its own processes for communication, as well as conflict resolution.
- Managers need to undertake an objective assessment after a product development project has been completed, identifying key success factors and the root causes of failures, and allocating resources to repairing failures.

(IV) Achieving Superior Customer Responsiveness:

Achieving superior customer responsiveness means giving customers value for their money, and steps taken to develop a competency in listening to its customers, focusing on its customers, and investigating and identifying their needs. Primary roles of different functions in achieving superior customer responsiveness are as follows:

- Building superior customer responsiveness needs *demonstrating leadership, shaping employee attitudes*, and using mechanisms for making sure that *customer needs are well known* within the company.
- Companies can provide a higher level of satisfaction if they differentiate their products by (1) *customizing* them, where possible, to the unique demands of individuals or groups and (2) reducing *the time it takes to respond to* or time that it takes for a good to be delivered or a service to be performed.
- Other sources of enhanced responsiveness to customers are superior design, superior service, and superior after-sales service and support. In turn, differentiation enables a company to build brand loyalty and charge a premium price for its products.

Achieving superior efficiency, quality, and innovation are integral part of achieving superior responsiveness to customers. It must constantly seek better ways to satisfy those needs. [Ref: Hill and Jones (2015)]

Please ignore the example of ROI, RI & EVA given in study material, and consider the following (Paper 402, page 9)

Problem: EBIT Rs 2,00,000; 12% Debentures Rs 1,00,000
 Shareholders' Equity Rs 5,00,000; Current Liabilities Rs 50,000
 Risk-free Return 6% Market rate of return 15%
 Beta factor 1.2, Tax rate 40%.
 Calculate ROI, RI & EVA

Solution: Total Assets or Gross Capital Employed:

Shareholders' Equity + Debentures + C.L. = Rs 650,000

Net Assets or Net Capital Employed:

Total Assets - Current Liabilities = Rs 600,000

or Sh. Equity + Debentures = Rs 600,000

~~WACC~~

Cost of Debt = $I(1-t) = 12\% (1 - 0.40) = 7.2\%$

Cost of Equity (under CAPM)

= Risk-free rate + β (Market rate - risk-free rate)
 = $6\% + 1.2(15\% - 6\%) = 16.8\%$

WACC = $\frac{(500,000 \times 16.8\%) + (1,00,000 \times 7.2\%)}{600,000} = 15.2\%$

(i) ROI (Return on Total Assets) = $\frac{\text{EBIT}}{\text{TA}} = \frac{\text{Rs } 2,00,000}{\text{Rs } 650,000} = \boxed{30.77\%}$

ROI (Return on Net Assets) = $\frac{\text{EBIT}}{\text{NA}} = \frac{\text{Rs } 2,00,000}{\text{Rs } 600,000} = \boxed{33.33\%}$

(ii) RI (Residual Income) = $\text{EBIT} - (\text{TA} \times \text{WACC})$
 = $\text{Rs } 2,00,000 - (650,000 \times 15.2\%) = \boxed{\text{Rs } 1,01,200}$

(iii) EVA (Economic Value Added) =
 NOPAT (before interest on debt) - (Net Assets \times WACC)
 = $\text{EBIT}(1-t) - (\text{NA} \times \text{WACC}) = \text{Rs } 1,20,000 - (600,000 \times 15.2\%)$
 = $\boxed{\text{Rs } 28,800}$

[For RI, WACC has been considered as 'Required Rate of Return']

J. Adandapat
 11/04/2020

Paper CC 402: Strategic Cost and Management Accounting (SCM)

Module –I

Transfer Pricing

(Prof. Ashish Kumar Sana)

Transfer Price-Shared Contribution/Market Price Method

(Problems on Transfer price based on Shared Contribution /Market Price Method already solved in Previous Classes)

Transfer pricing based on Opportunity Cost

Example 1

Division X is a profit centre which produces four products A,B,C and D. Each product is sold in the external market also. Following information is available for the period:

Particulars	A	B	C	D
Market price p.u. (Rs.)	300	292	280	260
Variable Cost p.u. (Rs.)	260	200	180	170
Labour hours required p.u.	3	4	2	3

Product D can be transferred to Division Y but the maximum quantity that might required for transfer is 2500 units of D.

The maximum sales in the external market are:

A	2800 Units
B	2500 Units
C	2300 Units
D	1600 Units

Division Y can purchase the same product at a slightly cheaper price of Rs.250 p.u. instead of receiving transfers of product D from Division X.

What should be the transfer price for each unit for 2500 units of D, if the total labour hours available in Division X are 20,000 hours?

Solution:**Calculation of Ranking of Products when availability of time is the key**

No	Particulars	A	B	C	D
1	Market price p.u. (Rs.)	300	292	280	260
2	Less: Variable Cost p.u. (Rs.)	260	200	180	170
3	Contribution p.u. (1-2)	40	92	100	90
4	Labour hours required p.u.	3	4	2	3
5	Contribution per hour (3÷4)	13.33	23	50	30
6	Ranking	IV	III	I	II
7	Maximum Demand (units)	2800	2500	2300	1600
8	Total No. of Hours (4x7)	8400	10000	4600	4800
9	Allocation of hours on the basis of ranking	600	10,000	4600	4800

Note: Time required to meet the demand of 2,500 units of Product D for Division Y is 7500 (2500×3) hours. This requirement of time viz. 7,500 hours for providing 2,500 units of Product D for Division Y can be met by sacrificing 600 hours of Product A (600÷3= 200 Units) and 6,900 hours of Product B (6900÷4=1725 Units).

Transfer Price= Variable Cost + Opportunity Cost

$$= \text{Rs.}170 + ([\text{Rs.} 8,000 + \text{Rs.} 158700] \div 2500 \text{ Units})$$

$$= \text{Rs.}170 + [\text{Rs.}166700 \div 2500 \text{ Units}]$$

$$= \text{Rs.}170 + \text{Rs.}66.68 = \text{Rs.}236.68$$

Opportunity Costs

No	Particulars	A	B
1	Opportunity Cost (Rs.)	600	6900
2	Contribution p.u . (Rs.)	13.33	23
3	Total Opportunity Costs (Rs.)	8,000	158700

Example 2: (Corrected)

Division X is a profit centre, which produces four products P, Q, R, S. Each product is sold in the external market also. Following information is available for the period:

Particulars	P	Q	R	S
Market price p.u. (Rs.)	700	690	560	460
Variable Cost p.u. (Rs.)	660	620	360	370
Labour hours required p.u.	3	4	2	3

Product S can be transferred to Division Y but the maximum quantity that might required for transfer is 2000 units of S.

The maximum sales in the external market are:

P	3000 Units
Q	3500 Units
R	2800 Units
S	1800 Units

Division Y can purchase the same product at a slightly cheaper price of Rs.450 p.u. instead of receiving transfers of product S from Division X.

What should be the transfer price for each unit for 2000 units of S, if the total labour hours available in Division X are: (i) 24,000 hours and (ii) 32,000 hours?

Solution:

Step 1: Calculation of Ranking based on Time Factor

Calculation of Ranking of Products when availability of time is the key factor

No	Particulars	P	Q	R	S
1	Market price p.u. (Rs.)	700	690	560	460
2	Less: Variable Cost p.u. (Rs.)	660	620	360	370
3	Contribution p.u. (1-2)	40	70	200	90
4	Labour hours required p.u.	3	4	2	3
5	Maximum Demand (Units)	3,000	3,500	2,800	1,800
6	Total No. of Hours	12,000	14,000	5,600	5,400
7	Contribution per hour (3÷4)	13.33	17.50	100	30
8	Ranking	IV	III	I	II

Step 2: Identify the sacrificing products and allocation would be based on ranking

Situation 1 : When labour hours available in Division X is 24, 000 hours

Statement showing product mix

Product (Ranking)	Maximum Demand (Units)	Hours p.u.	Units Produced	Hours Used	Balance Hours
R	2,800	2	2,800	5,600	(24,000-5,600)=18,400
S	1,800	3	1,800	5,400	(18,400-5,400)=13,000
Q	3,500	4	3,250	13,000	(13,000-13,000)=0 (Balance)
P	3,000	3	0	0	0

Here, sacrificing product is Q.

Time required meeting the demand of 2,000 units of Product S for Division Y is 6000 hours (2,000×3). This requirement of time viz. 6,000 hours for providing 2,000 units of Product S for Division Y can be met by sacrificing the production of 1,500 units of Product Q (1500 units ×4 hours).

Statement showing Transfer Price for each unit for 2,000 units of Product S

Transfer Price	2,000 units of product S (Rs.)	Per unit of Product S (Rs.)
Variable Cost (Rs.)	7,40,000	370
Opportunity Cost of the Contribution foregone by not producing 1,500 units of Q (1500 units ×Rs.70)	1,05,000	52.50
Transfer price	8,45,000	422.50

Situation 2 : When labour hours available in Division X is 32, 000 hours

Statement showing product mix

Product (Ranking)	Maximum Demand (Units)	Hours p.u.	Units Produced	Hours Used	Balance Hours
R	2800	2	2800	5600	(32000-5600)=26400
S	1800	3	1800	5400	(26400-5400)=21000
Q	3500	4	3500	13000	(21000-14000)=7000
P	3000	3	2333	0	(7000-7000)=0 (Balance)

Here, sacrificing product is P.

Time required to meet the demand of 2,000 units of Product S for Division Y is 6000 hours. This requirement of time viz. 6,000 hours for providing 2,000 units of Product S for Division Y can be met by sacrificing the production of 2,000 units of Product P (2000 units ×3 hours).

Statement showing Transfer Price for each unit for 2000 units of Product S

Transfer Price	2000 units of product S (Rs.)	Per unit of Product S (Rs.)
Variable Cost (Rs.)	7,40,000	370
Opportunity Cost of the Contribution foregone by not producing 2,000 units of P (2000 units ×Rs.40)	80,000	40.00
Transfer price	8,20,000	410.00

Paper CC.403: Auditing and Assurance Services
Module II

MCQ for Internal Assessment

1. _____ empowers the Central Government to specify audit of items of cost in respect of certain companies.

- (a) Section 143 of Companies Act, 2013
- (b) Section 139 of Companies Act, 2013
- (c) Section 148 of Companies Act, 2013**
- (d) Section 147 of Companies Act, 2013

2. Cost Audit represents true and fair view of the _____ of any product.

- (a) Cost of sale
- (b) Cost of raw material consumption
- (c) Cost of production**
- (d) None of these

3. A company shall within _____ days from the date of receipt of the Cost audit report shall furnish the same to the Central Government.

- (a) 60
- (b) 15
- (c) 30**
- (d) 90

4. The cost records are to be maintained as specified in

- (a) CRA 1**
- (b) CRA 2
- (c) CRA 3
- (d) CRA 4

5. The Cost Auditor appointed has to render the cost audit report to the board of directors of the Company, as per the specified time limit, in Form _____.

- (a) CRA 3**
- (b) CRA 1
- (c) XBRL
- (d) CRA 2

6. The applicability of cost audit under Companies (Cost Records and Audit) Rules, 2014 for regulated industries having overall annual turnover during immediate preceding financial year

- (a) Rs. 25 crores or more
- (b) Rs.35 crores or more
- (c) Rs.50 crores or more**
- (d) Rs.100 crores

7. Which of the following type of Electricity Company is under the purview of regulated sector?

- (a) Engaged in Generation
- (b) Engaged in Transmission
- (c) Engaged in Distribution & Supply
- (d) All the above**

8. The applicability of cost audit under Companies (Cost Records and Audit) Rules, 2014 for non-regulated industries having _____turnover of individual products or services during immediate preceding financial year

- (a) Rs. 25 crores or more
- (b) Rs. 35 crores or more**
- (c) Rs.50 crores or more
- (d) Rs. 100 crores or more

9. Which one of the below is not a regulated industry

- (a) Telecommunication
- (b) Electricity
- (c) Drugs & Pharma
- (d) Automobile**

10. Any casual vacancy in the office of a cost auditor, whether due to resignation, death or removal, to be filled by the Board of Directors within _____days of occurrence of such vacancy.

- (a) 30 days**
- (b) 60 days
- (c) 90 days
- (d) 180 days

11. Every cost auditor shall forward his duly signed report to the Board of Directors of the company within a period of _____ days from the closure of the financial year to which the report relates.

- (a) 60 days
- (b) 90 days
- (c) 180 days**
- (d) 270 days

12. The requirement for the cost audit shall not apply to a company whose revenue from exports, in foreign exchange exceeds _____ of its total revenue

- (a) 25%
- (b) 50%
- (c) 75%**
- (d) 10%

Model Questions

1. (a) What is Cost Audit? Discuss its importance.
 - (b) What are the objectives of Cost Audit?
 - (c) Find out the major differences between Cost Audit and Financial Audit.
 - (d) What is the procedure for appointment of cost auditor under the Companies Act, 2013?
 - (e) Discuss the applicability of Rule 3 and Rule 4 of the Companies (Cost Records and Audit) Rules, 2014 in respect of Cost Audit.
 - (f) A company has units in SEZ and in non-SEZ areas. The Companies (Cost Records and Audit) Rules 2014 has exempted companies operating in special economic zones from cost audit. What would be applicability of the Companies (Cost Records and Audit) Rules 2014 on such a company in respect of maintenance of cost accounting records and cost audit?
2. (a) Define Management Audit. Discuss about the uses of Management Audit.
 - (b) What are the objectives of management audit?
 - (c) What are the steps followed in Management audit?
 - (d) What is the relevance of management audit in today's business scenario?
 - (e) What are the behavioral aspects encountered in Management Audit? How the Management Auditor can overcome these behavioral problems?

3. (a) What is Environmental Audit? What are its objectives?
(b) Discuss the major benefits of Environmental Audit.
4. (a) What is Secretarial Audit?
(b) What are the benefits of Secretarial Audit?
(c) Which companies are required to undergo Secretarial Audit?
(d) “The scope of Secretarial Audit is not restricted to Companies Act” – Discuss.
5. (a) What is Secretarial Standard? Whether it is a substitute of any Act or Rules?
(b) Discuss the procedure of issuing a secretarial standard.
6. (a) What do you mean by Professional Ethics? What are the objectives of Professional Ethics?
(b) Mention the fundamental principles of Professional Ethics.
(c) Write a short note on ‘Other Misconduct’ as per the Chartered Accountants Act, 1949.
(d) Explain the mechanism to enquire into charges of misconduct of the Chartered Accountants as per the Chartered Accountants Act, 1949.
7. (a) How computerized Auditing System differs from Conventional Auditing System?
(b) Write short notes on ‘White Box Approach’ and ‘Black Box Approach’ of auditing in a CIS environment.
(c) What are the factors that an auditor has to consider while using Computer Assisted Auditing Techniques (CAAT)?
8. (a) What is Government Audit?
(b) Discuss the Duties and Powers of Comptroller and Auditor General as per the Comptroller & Auditor General’s (Duties, Powers and Conditions of Service) Act, 1971.
(c) What are the basic standards for the audit of the government expenditure?
9. (a) Write a short note on - Audit of local bodies.
(b) What are the objectives of the audit of local bodies?
10. Briefly discuss about the audit programme of non-profit making organization.

(Prepared by: Atanu Pramanick)

PAPER: CC.403: AUDITING AND ASSURANCE SERVICES

MODULE-I

UNIT/CHAPTER 3: AUDITOR'S REPORT AND AUDITOR'S INDEPENDENCE

PREPARED BY: CMA DR. SAMYABRATA DAS

Important Matters to be Included in CARO 2016

Fixed Asset [clause 3 (i)]

- (a) Whether the company is maintaining proper records showing full particulars, including quantitative details and situation of fixed asset;
- (b) Whether these fixed asset have been physically verified by management at reasonable intervals;
- (c) Whether any material discrepancies were noticed on such verification and if so, whether the same have been properly dealt with in the books of account;
- (d) Whether the title deeds of immovable properties are held in the name of the company. If not, provide the details thereof.

Inventory [Clause 3 (ii)]

- (a) Whether physical verification of inventory has been conducted at reasonable intervals by the management; and
- (b) Whether any material discrepancies were noticed on such verification and if so, whether the same has been properly dealt with in the books of account.

Deposits [Clause 3 (v)]

In case, the company has accepted deposits, whether the following has been complied with:

- (a) Directives issued by the Reserve Bank of India,
- (b) The provision of sec 73 to 76 or any other relevant provision of Companies Act, 2013 and the rules framed there under,
- (c) An order passed by Company Law Board (CLB) or National Company Law Tribunal (NCLT) or RBI or any court or any other tribunal.

However, if any of the above has not been complied with, the nature of contraventions should be stated.

Approval of Managerial Remuneration [Clause 3 (xi)]

Whether managerial remuneration has been paid or provided in accordance with the requisite approvals mandated by the provisions of Section 197 read with schedule V to the Companies Act, 2013. If not, the amount involved and step taken by the company for securing refund of the same have to be stated.

Nidhi Company [Clause 3 (xii)]

- (a) Whether the Nidhi company has complied with the Net Owned Funds to Deposit in the ratio of 1:20 to meet out the liability, and
- (b) Whether the Nidhi Company is maintaining 10% unencumbered term deposit as specified in the Nidhi Rules, 2014 to meet out the liability.

Related Party Transaction [Clause 3 (xiii)]

Whether all transactions with the related party are in compliance with Sections 177 and 188 of the Companies Act, 2013 where applicable and the details have been disclosed in the financial statement etc., as required by the applicable accounting standard.

GE 404: Business Research Methods

Module – I

CHAPTER-2: RESEARCH PROBLEM FORMULATION

In this Chapter, we shall study the research problem formulation. First of all we shall identify the broad problem area and try to define the problem we are to move ahead with in order to pursue our research. We shall also study some available research work related to the research problem we have identified. On the basis of existing literature we shall also identify the research gap. Once we shall successfully identify the gap, now we can give the final shape to the research problem i.e. problem formulation and also formulate hypothesis. With the help of undergoing through the process we shall finally draft the research proposal. The whole chapter is organized as follows:

- Broad Problem Area
- Problem Definition
- Literature Survey
- Identification of Research Gap
- Problem Formulation
- Hypothesis Formulation, and
- Drafting Research Proposal

BROAD PROBLEM AREA

In research process the first and foremost task is to select and define a research problem. In general terms a research problem indicated some difficulties which a researchers experiences in context of theoretical or practical situation and wants to find (search) a solution for the same. It is a situation where one sees a possible need for research and problem solving. The specific issues that need to be researched within the situation may not be identified at this stage.

The process begins with a researcher selecting a topic or a general area of study. A topic appears to be too broad for conducting research. A research problem is the topic you would like to address, investigate, or study, whether descriptively or experimentally. It is the focus or reason for engaging in your research. It is typically a topic, phenomenon, or challenge that you are interested in and with which you are at least somewhat familiar. So, it is known as broad problem area.

PROBLEM DEFINITION

It is said that a problem clearly stated is a problem half solved. Defining research problem is more essential than its solution. It is believed that selection of a good research problem is a discovery in itself. A research problem is a question that a researcher wants to answer or a problem that researcher wants to solve. Identification and formulation of the research problem is the first step in research process. Therefore, there is a need for defining the research problem. The problem to be investigated must be defined unambiguously. It will also help researcher to discriminate relevant data from the irrelevant ones. A correctly defined research problem will enable the researcher to be on the right track whereas a poorly defined research problem may create obstacles for the researchers. Research related many questions viz. What data is to be collected? Which types of data are relevant for the study? What relations are to be explored? What techniques are to be used for the purpose? etc. are cropping up in the mind of researcher which may be taken care of by him well in advance if the problem is well defined.

Problem definition is a prerequisite for any study and is a step of highest importance. Defining a research problem involves the task of laying down boundaries within which a researcher shall study the problem with a pre-determined objective in view. Defining research problem properly and clearly is a crucial part of a research study and it should be completed with due care by the researcher. He should define the problem in a systematic manner giving due weightage to all relating points.

The technique for defining a research problem involves the following steps:

1. Statement of the problem in a general way
2. Understanding the nature of the problem
3. Surveying the available literature
4. Developing the ideas through discussion
5. Rephrasing the research problem

The characteristics of a good research question/ problem are:

- a) Specific
- b) Clear
- c) Refer to the problem or phenomenon
- d) Reflect the intervention in experimental research, and
- e) Note the target group of participants

LITERATURE SURVEY

Once the problem is formulated, a brief summary of it should be written down. Literature survey is the written and systematic summary of the research which is conducted on a particular topic. It is a summary and synopsis of a particular area of research. It expands upon the reasons behind selection a particular research questions. Literature survey reduces the risk of reinventing the wheel confirms that the problem is perceived as relevant and significant. It helps in the development of the theoretical framework and hypothesis for testing. The documentation of relevant studies relating to the author and the year of the study is called literature review/literature survey. The various published and un-published materials those are available to the topics of interest and gaining access to these for literature survey. Academic journals, conference proceedings, government reports, books, etc. must be tapped depending on the nature of the research problem. Another step for survey of literature is gathering the relevant information either by going through necessary materials in a library or getting access to online source. In the present era of information communication technology (ICT) it has become quite easy to search the articles through 'google' or 'google scholar' etc.

It is compulsory for a research worker writing a thesis for a Ph.D. degree to write a synopsis of the topic and submit it to the Research Board for approval. At this juncture, the researcher should undertake extensive literature survey related with the problem. The earlier studies, if any, which are similar to the study in hand, should be carefully studied. A good library will be a great help to the researcher at this stage.

IDENTIFICATION OF RESEARCH GAP

A research gap is the missing element in the existing research literature, and we are to fill with our research approach to make our research proposal. A research gap is defined as a topic or area for which missing or insufficient information limits the ability to reach a conclusion for a question. A research need is defined as a gap that limits the ability of decision-makers (policy-makers, patients, practitioners) from making decisions. There is no specific process for identifying research gaps during systematic reviews. In business research organizations most commonly used variations of the PICO (population, intervention, comparison, outcomes) framework, which is proposed as a framework for identifying research gaps from systematic reviews.

As we search for journal articles, we need to read critically across the breadth of the literature to identify these gaps. Our goal should be to find a 'space' or opening for contributing new research. The first step is gathering a broad range of research articles on our topic. Once we start to gather the literature, we will try to critically read for what has, and has not, been

learned from the research. Also consider what has not been explored in the study and what may be a possible 'gap' or opening for our potential research and contribution to the topic.

PROBLEM FORMULATION

According to Albert Einstein *“The mere formulation of a problem is far more essential than its solution, which may be merely a matter of mathematical or experimental skill. To raise new questions, new possibilities, to regard old problems from a new angle require creative imagination and marks real advances in science.”*

The problem formulation consists of just one sentence and should make it clear to everyone *what* research problem, we aim to address and to whom and where it is relevant. The aim of a problem formulation is also to set a framework for your research and a good problem formulation is essential for completing a good study. If the problem is not stated properly the objectives will not be clear. If the objective is not clearly defined, the data collection becomes meaningless.

Formulating our research problem enables us to make a purpose of our study clear to us and target readers. Focus our paper on providing relevant data to address it. A problem statement is an effective and essential tool to keep us on track with research and evaluate it. How can we formulate a powerful research problem? Consider the following 5 ways to formulate the research problem:

1. Specify research objectives;
2. Review its context or environment;
3. Explore its nature;
4. Determine variable relationships;
5. Anticipate the possible consequences of alternative approaches.

Proper problem formulation is the key to success in the research. It is vital and any error in defining the problem may result in wastage of time and other resources.

HYPOTHESIS FORMULATION

After extensive literature survey, researcher should state in clear terms the working hypothesis or hypotheses.

Hypothesis may be defined as a proposition or a set of proposition set forth as an explanation for the occurrence of some specified group of phenomena either asserted merely as a provisional conjecture to guide some investigation or accepted as highly probable in the light of established facts. Quite often a research hypothesis is a predictive statement, capable of being tested by scientific methods, that relates an independent variable to some dependent variable. For example, consider statements like the following ones: “Students who receive counselling

will show a greater increase in creativity than students not receiving counselling” Or “the automobile A is performing as well as automobile B.” These are hypotheses capable of being objectively verified and tested. Thus, we may conclude that a hypothesis states what we are looking for and it is a proposition which can be put to a test to determine its validity.

In most types of research, the development of working hypothesis plays an important role. Hypothesis should be very specific and limited to the piece of research in hand because it has to be tested. The role of the hypothesis is to guide the researcher by delimiting the area of research and to keep him on the right track. It sharpens his thinking and focuses attention on the more important facets of the problem. It also indicates the type of data required and the type of methods of data analysis to be used. How does one go about developing working hypotheses? The answer is by using the following approach:

- (a) Discussions with colleagues and experts about the problem, its origin and the objectives in seeking a solution;
- (b) Examination of data and records, if available, concerning the problem for possible trends, peculiarities and other clues;
- (c) Review of similar studies in the area or of the studies on similar problems; and
- (d) Exploratory personal investigation which involves original field interviews on a limited scale with interested parties and individuals with a view to secure greater insight into the practical aspects of the problem.

Working hypotheses are more useful when stated in precise and clearly defined terms. It may be remembered that occasionally we may encounter a problem where we do not need working hypotheses, specially in the case of exploratory or formulative researches which do not aim at testing the hypothesis. But as a general rule, specification of working hypotheses is another basic step of the research process in most research problems.

DRAFTING RESEARCH PROPOSAL

A written proposal is often required when a study is being suggested. This is specially true when an outside research supplier is contracted to conduct the research. The written proposal ensures that the parties concur on the project’s purpose, the proposed methods of investigation, the extent of analysis, and the timing of each phase as well as of delivery of results. Budgets and other responsibilities and obligations are spelled out clearly. Normally, a research proposal should contain all the key elements involved in the research process and include sufficient information for the readers to evaluate the proposed study. A research proposal must include the research area, methodology and also address the questions like, what we plan to accomplish, why we want to do it and how we are going to do it.

Before writing up a research proposal, it is essential to identify the sponsors for the research. At the time of writing research proposal we must read and understand application guidelines from sponsors or clients, e.g., Universities, Ministry of Health, DRDO, DST etc.

A research proposal must have the following components:

- **Title:** The title of a research proposal should be concise and descriptive. We should try to think of an informative and catchy title. An effective title draws the attention and interest of readers and also influences them favourably towards the research proposal.
- **Introduction/ Background:** The main purpose of the introduction is to provide the necessary background or context for the research problem. How to frame the research problem is perhaps the biggest problem in proposal writing. The introduction typically begins with a general statement of the problem area, with a focus on a specific research problem, to be followed by the rationale or justification for the proposed study. It includes the research problem, rationale of the proposed study clearly indicating why it is worth doing. It also includes the brief description on the major issues and sub-problems to be addressed by the research.
- **Literature review/ Survey of Literature:** The aim of the literature review is to provide adequate background information on the research being proposed, especially on the prevalence or incidence of area of study or research problem. It should be brief, and indicate relevant related research that had or is being conducted and references should also be included. The review committee is normally aware of the various projects going on in the specified area of research. The literature review gives credits to those who have laid the groundwork for the proposed research. It shows researchers ability to critically evaluate relevant literature information and indicates their ability to integrate and synthesize the existing literature. It provides new theoretical insights or develops a new model as the conceptual framework for the proposed research and convinces your reader that your proposed research will make a significant and substantial contribution to the literature (i.e., resolving an important theoretical issue or filling a major gap in the literature).
- **Objectives of the Study:** Objectives of the proposed study should be stated clearly. The objectives identified should be general as well as specific. It should be clear and concise. It must be measurable and feasible such that it can be achieved within specified timeframe.
- **Methodology:** The Methodology section is very important because it tells the Research Committee how we plan to tackle our research problem. It will provide our work plan and describe the activities necessary for the completion of the project. For quantitative studies, the methodology section typically consists of the research study design (questionnaire study or laboratory experiment), selection of research location, subjects or participants (respondents), sampling method, sample size, study instruments, data

collection, data analysis and interpretation (e.g. Statistical Package for Social Sciences/ SPSS, Microsoft Excel, Statistical Analysis Software/SAS, R, Minitab, etc.), ethical considerations. Researchers should make sure that the research design or approach is appropriate for the stated objectives. We should not assume that the reviewers are familiar with techniques to be used in the study. In this section researchers should provide a brief description of the study location, study design and flow of activities.

- **Plan - time frame and schedule of activities (Gantt chart):** Planning for the research proposal should include the time frame and activity schedule for the proposed research. The time frame should include time for purchasing and obtaining relevant consumables and facilities needed to conduct the study, conduct of study, analysis of data, and writing up the project report. The activity schedule is essential for effective monitoring of project. It should list the time frame for major activities, and include milestones. A most effective way of plotting the activity schedule is by using the Gantt Chart. See Example Below:

Year	2020											
Project (Activities)	J	F	M	A	M	J	J	A	S	O	N	D
1. Planning of research	■	■										
2. Literature search		■	■									
3. Development of questionnaire				■								
4. Pre-testing					■							
5. Training of researchers and research assistants						■						
6. Data collection							■	■	■			
7. Data entry and analysis									■	■	■	
8. Report writing and presentation												■

- **Budget:** An adequate budget is essential for the study researchers plan to conduct. In preparation of the budget we should provide a total and yearly break-up of the fund needed for the research project. We should follow the guidelines provided by the sponsors wherefrom we plan to obtain the grant. Researcher should give appropriate estimates of costs depending on the different areas, e.g. travel and transportation, consumables, salaries, services, rentals, equipment, utilities, repairs, etc. and also they should provide adequate justification, especially for costly items.
- **Details of research team:** Researcher should identify all expertise required for the proposed research and the curriculum vitae (CVs) of all key researchers be attached. Researchers should obtain agreement of participation by team members in writing.

They should ensure adequate expertise and spell out responsibilities of each of the researchers in the team.

The above recommended elements in the research proposal are only suggestive. They do not guarantee a successful research application. They may however, help researcher prepare a carefully conceptualized and comprehensive proposal. Sometime the elements of the proposal vary as per the requirement criteria of the Research Board, Sponsoring Agencies, etc. One should also keep in mind the following common errors in proposal writing:

- Objectives too broad or too ambitious
- Objectives do not reflect title of the study or statement of problem
- No literature review or relevant references
- Inadequate information on methodology
- Inappropriate time-frame and schedule of activities – too ambitious
- No justification for Budget – asking for too much or too little

Multiple Choice Questions:

1. The problem to be investigated must be defined
 - a. unclearly
 - b. uncertainly
 - c. unambiguously**
 - d. indifferently
2. The characteristics of a good research problem *does not* include
 - a. specific
 - b. clear
 - c. refer to the problem
 - d. leisurely**
3. A good _____ will be a great help to the researcher at the stage of literature survey.
 - a. cafeteria
 - b. library**
 - c. cinema halls
 - d. museum
4. Which of the following is not a statistical software
 - a. SPSS
 - b. SAS
 - c. AAR**
 - d. Minitab

5. A most effective way of plotting the activity schedule is by using the
- a. **Gantt Chart**
 - b. Pie Chart
 - c. Line Chart
 - d. Bar Chart

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Paper: Business Research Methods; Unit 8; Dr. S Sarkar

Interpretation of the result of a Multiple Regression Analysis (Basic Idea)

The output of any Multiple Regression Analysis (i.e. where there is one dependent and more than one independent variables) obtained through any standard statistical package (like Statistical Package for Social Sciences or SPSS) has the following three parts:

1. Model Summary: This shows the dependent variable, independent variables included in the model, whether the model includes any intercept or constant term (for example, in $Y = a + b.X$ equation 'a' is called the constant term), value of R (i.e. coefficient of multiple correlation = correlation between the dependent variable with all the independent variables), value of R^2 (i.e. coefficient of multiple determination = percentage of variation in dependent variable as explained by the independent variable taken together; it indicates the overall explanatory power of the model) and adjusted R^2 (which has the same function as R^2 but is more reliable).

2. ANOVA Table: The results included in this table shows the overall significance of the model under consideration. The test is done by an F test being the ratio between regression mean square and error mean square. If F statistic is found higher than the critical value of F statistic then the null hypothesis of the model being non-significant is rejected and the model is considered to be significant (a researcher always wants a significant model as it facilitates estimation of dependent variable based on independent variables value).

3. Coefficients: This table includes the value of all regression coefficients including the constant term, their t value and p value. If t value (absolute value) is found to be higher than the critical value of t (absolute value) the null hypothesis of insignificant coefficient of the independent variable is rejected and the variable is considered to be a good predictor of the dependent variable.

Note: p values are an alternative in deciding the acceptability of null hypothesis. If p value is found to be lower than 0.01 (or 0.05) then the hypothesis is considered to be rejected at 1% level (or 5% level respectively).

Now consider the following example:

A consumer electronic company has adopted an aggressive policy to increase sales of a newly launched product. The company has invested in advertisement as well as employed salesmen for increasing sales rapidly. A multiple regression analysis has been done based on the results of 24 months of sales with sales being the dependent variable and advertisement expenditure and no. of salesmen being the independent variables.

The results of the regression are given below:

Model Summary

Model	R	R^2	Adjusted R^2
1	0.860 ^a	0.739	0.714

a. predictors: (constant, advertisement, salesmen)

b. Dependent variable: sales

ANOVA Table

Model		Sum of squares	df	Mean Square	F	Sig. (p value)
1	Regression	1.449E8	2	7.243E7	29.740	0.000
	Error	5.114E7	21	2435305.428		
	Total	1.960E8	23			

a. predictors: (constant, advertisement, salesmen)

b. Dependent variable: sales

Coefficients

Model		Value of the coefficients	Standard Error	t value	Sig. (p value)
1	Constant	3856.693	1340.772	2.876	0.009
	Salesmen	-104.321	39.489	-2.642	0.015
	Advertisement	24.609	3.923	6.273	0.000

a. dependent variable: sales

You are required to interpret the above results.

Solution:

The results of the regression can be interpreted as follows:

Model Summary: The model summary shows that the regression under study is a linear regression with sales being the dependent and salesmen and advertisement expenditure being the independent variables. The model has a constant term and hence it will look like –

$X_1 = C + b_1X_2 + b_2X_3$ where $X_2 =$ salesmen and $X_3 =$ advertisement expenditure

The value of multiple correlation coefficient is 0.860.

The value of coefficient of multiple determination is 0.739 which means 73.9% of the variation in sales can be explained by the variation in salesmen and advertisement expenditure. The percentage is quite high. The value of Adjusted R^2 is 0.714 which is almost similar to R^2 . Thus, the overall explanatory power of the model is satisfactory.

ANOVA Table: The ANOVA table shows that the F statistic is having a p value of 0.000 which is lower than 0.01. Thus, the null hypothesis is rejected and alternative hypothesis of the model being significant is accepted.

Coefficients: The table shows that the constant term and the variable 'advertisement' have coefficients with p value less than 0.01 and hence they are significant at 1% level. Similarly, the coefficient of 'salesmen' is significant at 5% level (more than 0.01 but less than 0.05). Thus, the variables have significant effect on then dependent variable and the constant term is also important.

- Existence of constant term signifies that irrespective of salesmen and advertisement expenditure a minimum amount of sales is expected.
- Salesmen have a negative impact on sales i.e. increasing salesmen will reduce sales by 104 unit.
- Advertisement expenditure has a positive impact on sales i.e. increasing advertisement by 1 unit will increase sales by 24 units.

Financial Analysis_ Module 2_ Unit 2

(Prof. S. Sen and Dr. S. Sarkar)

Please consider the corrected problem as follows:

Application of Altman's Z Score Model; Numerical Example:

Q. The Statement of Assets and Liabilities of XYZ Ltd as on 31.03.2016 is given below:

Liabilities	Amount(Rs.)	Assets	Amount(Rs.)
Equity Share Capital (Rs.10)	800000	Fixed Assets	2000000
Reserve and Surplus	500000	Investments	400000
10% Debentures	800000	Inventories	500000
12% Term Loan	800000	Sundry Debtors	700000
Sundry Creditors	600000	Cash and Bank	200000
Provision for Tax	300000		
	3800000		3800000

Additional Information:

- i. Net Sales for the year 2015-16 was Rs.1,04,00,000.
- ii. Dividend per share was Rs.2.50
- iii. Dividend Payout ratio was 60%.
- iv. Price-Earnings ratio is 11.
- v. Corporate tax rate is 30%

Using Altman's model, calculate Z score of XYZ Ltd. and interpret the results.

Solution:

The Altman's Z score equation for prediction of bankruptcy is -

$$Z = 0.012x_1 + 0.014x_2 + 0.033x_3 + 0.006x_4 + 0.999x_5 ; \text{ Where}$$

$$x_1 = \frac{\text{Working Capital}}{\text{Total Asset}} \text{ (a liquidity measure)}$$

$$x_2 = \frac{\text{Retained Earnings}}{\text{Total Asset}} \text{ (a measure of re-invested earnings)}$$

$$x_3 = \frac{\text{EBIT}}{\text{Total Asset}} \text{ (a profitability measure)}$$

$$x_4 = \frac{\text{Market Value of Equity}}{\text{Book Value of Total debt}} \text{ (a measure for the firm's financial structure or leverage)}$$

$$x_5 = \frac{\text{Sales}}{\text{Total Asset}} \text{ (a measure for sales generating ability of the firm's assets)}$$

1. Here, working capital = C.A – C.L

$$= (500000 + 700000 + 200000) - (600000 + 300000) = 500000$$

Total Assets = 3800000

$$\text{So, } x_1 = (500000 / 3800000) \times 100 = 131.58\%$$

2. Here, Retained earnings = Reserve and surplus = 500000

$$\text{So, } x_2 = (500000 / 3800000) \times 100 = 131.58\%$$

3. Here, $DPS = EPS \times \text{Dividend payout ratio}$

Or, $EPS = DPS / \text{Dividend payout ratio} = 2.50 / 60\% = 4.17$

So, Earnings available for equity shareholders = $EPS \times \text{No. of shares} = 4.17 \times 80000 = 333333$

Calculation of EBIT

Particulars	Amount (Rs.)
Earnings available for equity shareholders i.e. PAT	333333
Add. Tax ($\frac{30}{100-30} \times 333333$)	<u>142857</u>
EBT	476190
Add. Interest on debenture (800000*10%)	80000
Interest on debenture (800000*12%)	<u>96000</u>
EBIT	<u>176000</u>
	652190

$$X_3 = (652190 / 3800000) \times 100 = 171.63\%$$

4. Market price per share = $EPS \times P/E \text{ Ratio} = 4.17 \times 11 = 45.87$

Market value of equity = $45.87 \times 80000 = 3669600$

Book value of total debt = Total Assets – (E.S.C + Reserve and Surplus) = 3800000 – (800000+500000) = 2500000

(Alternatively, Book value of total debt = Long term debt + current liabilities)

$$x_4 = (3669600 / 2500000) \times 100 = 146.78\%$$

5. Net sales = 1,04,00,000

$$x_5 = 1,04,00,000 / 3800000 = 2.74 \text{ (not to be converted into percentage)}$$

$$\begin{aligned} \text{So, } Z &= 0.012 \times 131.58 + 0.014 \times 131.58 + 0.033 \times 171.63 + 0.006 \times 146.78 + 0.999 \times 2.74 \\ &= 1.58 + 1.84 + 5.66 + 0.88 + 2.73 = 12.69 \end{aligned}$$

Since the value of Z is higher than 2.99, the firm is not a bankrupt firm.

International Finance

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Module – II

Status of Study Material

	Chapters	Status
Unit- 6	International Financing	Study Materials are attached with this file.
Unit -7	International Capital Budgeting	Study Materials are attached with this file.
Unit -8	International Transfer Pricing	Hard copy of Study materials have already been provided to Day and Evening Students of M.Com, Semester IV in classroom.
Unit -9	International Taxation	Soft copy of Study materials have been uploaded to university website in first lot.

Note:

There is a typing error in the study material of 'International Taxation'. In point no 12 it will be Base Erosion and Profit Shifting (BEPS) instead of Base Erosion and Profit Sharing (BEPS).

International Financing

Content: Corporate Sources and Uses of Funds - Equity Financing (ADR and GDR) - International Financial Markets - Development Banks –Project Finance - The Euro Markets

1. Introduction

The world economy is becoming increasingly globalized. The concept of globalization refers to the increasing connectivity and integration of countries and corporations and the people within them in terms of their economic, political, and social activities. Globalization affects all aspects of society, but economically, two main trends define it. First, countries continue to expand their trade in goods and services. Second, countries continue to reduce their barriers to capital flows through the international financial system. The international financial system consists of international financial markets, international financial intermediaries and international financial instruments. Because of deregulation, liberalisation and technological innovation that have taken place since the early 1970's, international capital markets have shown considerable growth.

Because of globalization, multinational corporations dominate the corporate landscape. A multinational corporation (MNC) produces and sells goods or services in more than one nation. An MNC consists of a parent company in the firm's originating country and the operating subsidiaries, branches, and affiliates it controls both at home and abroad. The United Nations refers to such firms as *transnational corporations* to emphasize that the operation and ownership of these enterprises is spread throughout the world.

2. Globalization of Financial Markets

The globalization of financial markets and the profound changes they have undergone have also dramatically changed how MNCs manage their business risks, improved their access to foreign capital, and enhanced their ability to reduce financing costs. The advancement in communications and technology together with financial deregulation abroad has blurred the distinction between domestic and foreign financial markets. As the necessary electronic technology has been developed and transaction costs have plummeted, the world has become one vast, interconnected market. The major issues and factors behind the globalization of financial markets are discussed below:

(a) *Financial Regulation and Deregulation*

Growing competition also has led to increasing deregulation of financial markets worldwide. Deregulation is hastened by the process of **regulatory arbitrage**, whereby the users of capital markets issue and trade securities in financial centers with the lowest regulatory standards and, hence, the lowest costs. *Regulatory arbitrage is the practice of taking advantage of regulatory difference between two or more markets which finally results in similar type of regulation in all financial centers.* In order to win back business, financial centers around the world are throwing off obsolete and costly regulations.

(b) *Financial Innovation*

Whereas competition drives the international financial system, innovation is its fuel. Financial innovation segments, transfers, and diversifies risk. It also enables companies to tap previously inaccessible markets and permits investors and issuers alike to take advantage of tax loopholes. More generally, financial innovation presents opportunities for value creation. To the extent that a firm can design a security that appeals to a special niche in the capital market, it can attract funds at a cost that is less than the market's required return on securities of comparable risk.

(c) *Trends in Financial Openness*

A country is financially open if it allows foreigners to invest in its capital markets and allows its citizens to invest abroad. After World War II, most countries had controls or restrictions in place that prevented the free flow of capital across borders. However, in the 1980s, many developed countries began liberalizing their capital markets. For example, Japan started to liberalize in 1984; in Europe, the movement toward the Single Market forced many countries to abolish their capital controls, with France abolishing capital controls in 1986, Italy in 1988, India in 1991 and Belgium in 1990. In the late 1980s and during the 1990s, many developing countries began a financial liberalization process, relaxing restrictions on foreign ownership of their assets and taking other measures to develop their capital markets, often in tandem with macroeconomic and trade reforms.

(d) *The New Financial Landscape*

The deregulatory zeal of governments worldwide happened against the background of and perhaps as a reaction to a vastly different financial landscape that emerged in the 1980s. Most importantly, the markets for financial derivatives exploded, backed by advances in financial

economics and computer technology. A derivative security is an investment whose payoff over time is *derived* from the performance of underlying assets (such as commodities, equities, or bonds), interest rates, exchange rates, or indices (such as a stock market index, a consumer price index, or an index of weather conditions).

Another important development was the increased use of **securitization** —the repackaging of “pools” of loans or other receivables to create a new financial instrument that can be sold to investors. For example, financial institutions package mortgages or car loans into complex securities that are sold to investors, thereby spreading the risks involved. Moreover, banks earn fees on these securities and need not hold a capital buffer on their balance sheets to protect against possible losses as required for a regular loan. The spectacular growth in derivatives and securitization considerably increased the complexity in the financial intermediation business. These developments dramatically improved the ability of banks and corporations to manage risk.

(e) *Global Financial Crisis*

From 2007 through 2010, the world witnessed a full-blown financial crisis that started in the United States and led to a global recession, the longest and deepest in the post-war era. The crisis also raised a host of regulatory issues. Central banks and governments across the world reacted vehemently to contain the crisis, pumping money into banks and companies and running very expansionary monetary and fiscal policies. Insurance may make people behave riskier, just as an anti-lock braking system may not necessarily increase road safety because drivers with such systems drive faster. When large institutions feel they are “too big to fail,” they may behave recklessly. Such issues will undoubtedly be debated and studied at length in years to come.

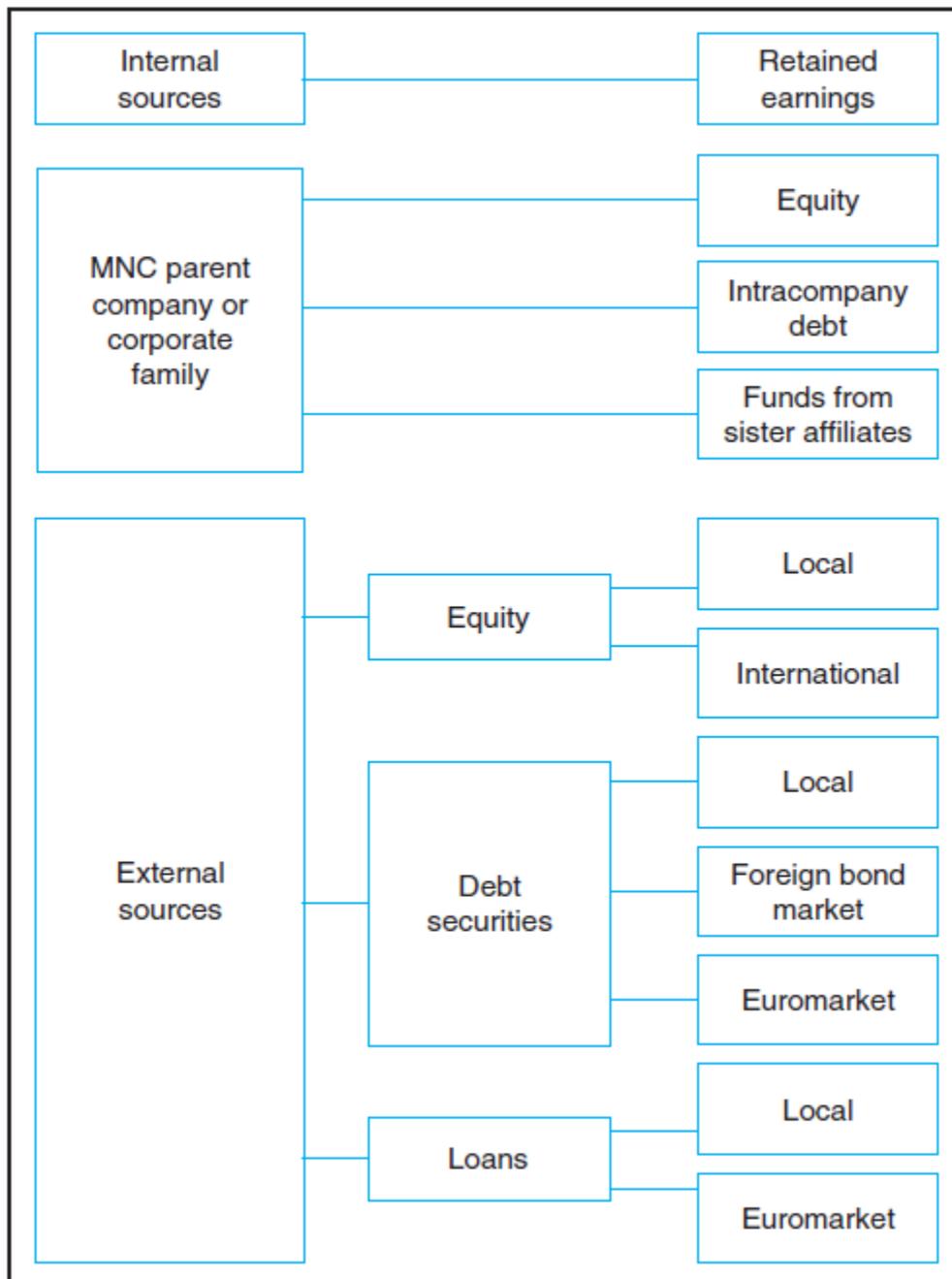
3. Corporate Sources and Uses of Funds

3.1. Corporate Sources of Finance

The sources of funds for an MNC (and its subsidiaries) can be split into two major categories: cash that is internally generated by the MNC and cash that is externally provided from the debt markets or the equity markets. The potential sources of external capital are extremely wide ranging. Both bonds and stocks (debt and equity financing) can be issued by a firm and sold to investors, typically through the financial intermediation of an investment bank. These externally issued securities are often tradable in secondary markets.

In contrast, loans are obtained from specialized financial intermediaries, typically commercial banks, and the lender monitors the financial behaviour of the firm to make sure she will get repaid. For all three types of external sources of funds (bank loans, debt securities, and equity), MNCs and their affiliates can tap either domestic or international markets. A foreign affiliate of an MNC can obtain funds from within the MNC or from the same external sources as mentioned in the Exhibit below. The affiliate's external borrowing ability may be enhanced when the parent company guarantees the loan.

Exhibit -1: Corporate Sources of Finance



(Source: Bekaert, G and Hodrick, R. J., *International Financial Management*, Pearson)

3.2. External Financing

External finance can come from investors or lenders. Investors give a company money by buying the securities it issues in the financial markets. These securities, which are generally *negotiable* (tradable), usually take the form of publicly issued debt or equity. Debt is the preferred alternative: Regardless of the country studied, debt accounts for the overwhelming share of external funds. By contrast, new stock issues play a relatively small and declining role in financing investment.

The main alternative to issuing public debt securities directly in the open market is to obtain a loan from a specialized financial intermediary that issues securities (or deposits) of its own in the market. These alternative debt instruments usually are commercial bank loans for short-term and medium-term credit or privately placed bonds for longer-term credit. Unlike publicly issued bonds, privately placed bonds are sold directly to only a limited number of sophisticated investors, usually life insurance companies and pension funds.

Covenants

Privately placed bonds are generally non-negotiable and have complex, customized loan agreements called *covenants*. The restrictions in the covenants range from limits on dividend payments to prohibitions on asset sales and new debt issues. They provide a series of checkpoints that permit the lender to review actions by the borrower that have the potential to impair the lender's position. These agreements have to be regularly renegotiated before maturity. As a result, privately placed bonds are much more like loans than like publicly issued and traded securities.

4. Financial Systems and Corporate Governance

Despite the apparent convergence of financial systems, there are still some notable differences among countries in terms of corporate governance, which refers to the means whereby companies are controlled. So the financial systems can be broadly categorised into two i.e. Anglo-Saxon or AS model and the Continental European and Japanese or CEJ type of financial system. These are discussed below:

(a) The Anglo-Saxon (AS) model

The United States and the United Kingdom are often viewed as prototypes of a market-oriented financial system frequently referred to as the Anglo- Saxon or AS model. In AS

countries, institutional investors (pension funds, mutual funds, university and other non-profit endowments, and insurance companies) make up an important part of the financial system. Equity finance is important in AS countries and institutional shareholders exert a great deal of corporate control. The accepted objective is to maximize shareholder value, and boosting the return on capital employed is stressed.

(b) The Continental European and Japanese (CEJ) model

Germany, France, and Japan are generally regarded as typical representatives of bank-centered finance (the Continental European and Japanese or CEJ type of financial system). In CEJ countries, bank finance is prominent, share ownership and control are concentrated in banks and other firms, and corporate decision making is heavily influenced by close personal relationships between corporate leaders who sit on one another's boards of directors. Individual shareholders have little voice, resulting in much less concern for shareholder value and relatively low returns on capital. However, in all countries, competitive pressures and the threat of hostile takeovers of underperforming companies are forcing greater managerial accountability and an increased focus on shareholder value. For example, a number of Continental European companies are trying to make themselves more attractive to the growing ranks of international investors by improving their disclosure and corporate governance practices.

Keiretsu

Japanese and Korean firms use a high degree of leverage, having a large amount of debt. Large Japanese and Korean companies use vast mutual-aid networks called *keiretsu* & *chaebol* – usually with a major bank at the center. *Keiretsu* and *chaebol* ties constitute a web of tradition, cross shareholdings, trading relationships, management, cooperative projects and information swapping. They offer financial backing, management advice and favourable contracts, etc., to their members and also provide a safety net to their members when in trouble. The bank holds an important position.

Universal Banking

In Germany, there is the *universal banking*. The German banks give loans and also hold major equity positions in the companies. This reduces conflicts between the two categories of investors and lowers costs and speeds up resolution of problems. However, the financing

pattern has started changing in Germany and Japan and they are now increasingly turning to the market for equity capital.

5. Financial Centers

Financial centers are locations with high concentration of participants in banking, asset management, insurance or financial markets with venues and supporting services for these activities to take place. Participants can include financial intermediaries (such as banks and brokers), institutional investors (such as investment managers, pension funds, insurers, hedge funds), and issuers (such as companies and governments). Financial centers usually host companies that offer a wide range of financial advisory services, for example relating to mergers and acquisitions, or which participate in other areas of finance, such as private equity and reinsurance.

5.1. International Financial Centers (IFCs)

International financial centers are the markets in which foreigners can both borrow and lend money. These markets can develop anywhere, provided that local regulations permit the market and that the potential users are attracted to it. International Financial Centers (IFCs) are large international full-service centers with advanced settlement and payments systems, supporting large domestic economies, with deep and liquid markets where both the sources and uses of funds are diverse, and where legal and regulatory frameworks are adequate to safeguard the integrity of principal-agent relationships and supervisory functions. IFCs generally borrow short-term from non-residents and lend long-term to non-residents. In terms of assets, London is the largest and most established such center, followed by New York, the difference being that the proportion of international to domestic business is much greater in the former.

The most important international financial centers are London (UK), New York (USA), Tokyo (Japan), Paris (France), Frankfurt (Germany), Singapore, Hong Kong, Sydney (Australia) and Zurich (Switzerland), Belgium, Netherlands, Cayman Islands and Bahamas. Other centers include Amsterdam (Holland), Edinburgh and Glasgow (Scotland) and Milan (Italy). These centers play a key role in the financing of internationally involved firms and also in their foreign exchange risk management.

5.2. Offshore Financial Centers (OFCs)

Offshore finance is, at its simplest, the provision of financial services by banks and other agents to non-residents. These services include the borrowing of money from non-residents and lending to non-residents. This can take the form of lending to corporates and other financial institutions, funded by liabilities to offices of the lending bank elsewhere, or to market participants. It can also take the form of the taking of deposits from individuals, and investing the proceeds in financial markets elsewhere. Offshore Financial Center can be defined as any financial center where offshore activity takes place. (IMF, 2000)

A more practical definition of an OFC is a center where the bulk of financial sector activity is offshore on both sides of the balance sheet, (that is the counterparties of the majority of financial institutions liabilities and assets are non-residents), where the transactions are initiated elsewhere, and where the majority of the institutions involved are controlled by non-residents. Thus OFCs are usually referred to as:

- Jurisdictions that have relatively large numbers of financial institutions engaged primarily in business with non-residents;
- Financial systems with external assets and liabilities out of proportion to domestic financial intermediation designed to finance domestic economies; and
- More popularly, centers which provide some or all of the following services: low or zero taxation; moderate or light financial regulation; banking secrecy and anonymity.

Incentives offered by a typical OFC to non-residents

According to the Report of the Working Group on Offshore Financial Centers of the Financial Stability Forum (2000), the following are some of the incentives offered by a typical OFC to non-residents:

- Either very low taxes or no taxes on business or investment income.
- No withholding taxes.
- Incorporation and licensing facilities light and flexible.
- Supervision very light and flexible.
- Flexibility in the use of trusts and other special corporate vehicles.
- Not necessary for financial institutions and/or corporates to have a physical presence, i.e., brass-plate institutions are allowed.

- Very high level of client confidentiality based on impenetrable secrecy laws.

The aforementioned incentives are not allowed to residents. An OFC is not directly under the control and supervision of the authorities of a particular country. A number of important OFCs are small island states, having only few domestically owned financial institutions and little non-financial economic activity but with a large number of ‘brass-plate’ institutions. Many of the banks licensed in OFCs are, ‘brass-plate’ – that is, they have no physical presence in the OFC and conduct their operations from New York, London or elsewhere.

The following table shows the lists of international offshore financial centers.

Andorra	Cayman Islands	Luxembourg	New Caledonia
Anguilla	Costa Rica	Macau	Panama
Antigua	Cyprus	Malta	St. Kitts And Nevis
Aruba	Gibraltar	Mauritius	Seychelles
Bahamas	Guernsey	Monaco	Singapore
Bahrain	Hong Kong	Montserrat	Switzerland
Barbados	Ireland	Nauru	Tonga
Belize	Isle Of Man	Netherlands	Turks And Caicos
Bermuda	Jersey	Netherlands	Vanuatu
British Virgin Islands	Liechtenstein	Antilles	

6. Foreign Access to Domestic Markets

Despite the increasing liberalization of financial markets, governments are usually unwilling to rely completely on the market to perform the functions of gathering and allocating funds. Foreigners in particular are often hampered in their ability to gain access to domestic capital markets because of government-imposed or government-suggested restrictions relating to the maturities and amounts of money that they can raise. Nonetheless, the financial markets of many countries are open wide enough to permit foreigners to borrow or invest. MNCs are in a better position to access domestic capital markets in the following three ways.

6.1. The Foreign Bond Market

The foreign bond market is an important part of the international financial markets. It is simply that portion of the domestic bond market that represents issues floated by foreign companies or governments. As such, foreign bonds are subject to local laws and must be denominated in the local currency. At times, these issues face additional restrictions as well.

The United States and Switzerland contain the most important foreign bond markets. (Dollar-denominated foreign bonds sold in the United States are called *Yankee bonds*.) Major foreign bond markets are also located in Japan and Luxembourg. (Yen bonds sold in Japan by a non-Japanese borrower are called *Samurai bonds*, in contrast to *Shogun bonds*, which are foreign currency bonds issued within Japan by Japanese corporations.) Since the 1990s, more of these foreign bond offerings have consisted of global bond issues. A *global bond* issue is an offering, usually denominated in dollars that is registered in several national jurisdictions and marketed to investors around the world.

6.2. The Foreign Bank Market

The foreign bank market represents that portion of domestic bank loans supplied to foreigners for use abroad. As in the case of foreign bond issues, governments often restrict the amounts of bank funds destined for foreign purposes. Foreign banks, particularly Japanese banks, have become an important funding source for U.S. corporations.

6.3. The Foreign Equity Market

The idea of placing stock in foreign markets has long attracted corporate finance managers. One attraction of the foreign equity market is the diversification of equity funding risk. A pool of funds from a diversified shareholder base insulates a company from the vagaries of a single national market. Some issues are too large to be taken up only by investors in the national stock market.

7. Equity Financing through ADR and GDR

7.1. American Depositary Receipts (ADR)

Depository receipt represents a claim on foreign shares held by a trustee. Depository receipts are denominated in the domestic currency, regulated by domestic authorities, and sold through domestic brokers. Depository receipts issued in the US market are known as American Depositary Receipts (ADRs). ADRs are denominated in dollars and trade just like any other US share. To issue an ADR, a foreign firm enlists an investment bank to purchase a block of shares to act as trustee. The investment bank issues dollar-denominated stock certificate ADRs – in the US market with foreign share as collateral. The underlying asset is a portfolio of foreign shares held by investment bank as trustee. Dividends are converted into

dollars and distrusted by the trustee. Such receipts must be issued in accordance with the provisions stipulated by the Securities and Exchange Commission of USA (SEC) which are very stringent.

The ADR holder is entitled to the same rights and advantages as owners of the underlying securities in the home country. Several variations on ADRs have developed over time to meet more specialized demands in different markets. The Bank of New York Mellon (BNY Mellon) dominates the ADR custodial market, but JPMorgan Chase, Citigroup, and Deutsche Bank are also important players.

7.2. Global Depositary Receipts (GDR)

GDRs are like ADRs, but they can trade across many markets and settle in the currency of each market. A GDR program allows foreign companies to raise capital in two or more markets simultaneously and broaden their shareholder base. Global depositary receipts are not always associated with existing companies seeking to increase their shareholder base and raise additional capital. They can also be associated with companies wanting to tap the equity market for the first time. Some companies issue stock locally but also target foreign investors, especially foreign institutional investors.

Characteristics of GDR

- (i) Holders of GDRs participate in the economic benefits of being ordinary shareholders, though they do not have voting rights.
- (ii) GDRs are listed on the Luxemburg stock exchange.
- (iii) Trading takes place between professional market makers on an OTC (over the counter) basis.
- (iv) The instruments are freely traded.
- (v) They are marketed globally without being confined to borders of any market or country as it can be traded in more than one currency.
- (vi) Investors earn fixed income by way of dividends which are paid in issuer currency converted into dollars by depository and paid to investors and hence exchange risk is with investor.
- (vii) As far as the case of liquidation of GDRs is concerned, an investor may get the GDR cancelled any time after a cooling off period of 45 days.

7.3. Global Shares

One outcome of the increasing globalization of stock markets is the global share. Global shares are ordinary shares of company listed and traded in the same form on any market in the world. They are tracked in a single global registry and trade in the home currency of each market. Cross-border clearing and settlement occur electronically, as the leading international clearing and settlement organizations are setting up one global system of securities processing and settlement. The first global share arose in late 1998 when the newly created Daimler Chrysler began trading as a global share in the United States, Germany, Japan, and five other countries.

8. Development Banks

To help provide the huge financial resources required to promote the development of economically backward areas, the United States and other countries have established a variety of development banks, whose lending is directed to investments that might not otherwise be funded by private capital. These investments include dams, roads, communication systems, and other infrastructure projects whose economic benefits cannot be completely captured by private investors, as well as projects such as steel mills or chemical plants whose value lies in perceived political and social advantages to the nation (or at least to its leaders). The loans generally are medium to long term and carry concessionary rates.

This type of financing has three implications for the private sector-

First, the projects require goods and services, which corporations can provide.

Second, establishing an infrastructure makes available new investment opportunities for multinational corporations.

Third, even though most development bank lending is done directly to a government, multinationals find that these banks are potential sources of low-cost, long-term, fixed-rate funds for certain types of ventures.

There are three types of development banks: the World Bank Group, regional development banks, and national development banks.

8.1. The World Bank Group

The World Bank Group is a multinational financial institution that was established at the end of World War II to help provide long-term capital for the reconstruction and development of member countries. It is composed of three related financial institutions: the International Bank for Reconstruction and Development (IBRD), also known as the World Bank; the International Finance Corporation (IFC); and the International Development Association (IDA).

a. International Bank for Reconstruction and Development (IBRD)

The IBRD, or World Bank, makes loans at nearly conventional terms for projects of high economic priority. To qualify for financing, a project must have costs and revenues that can be estimated with reasonable accuracy. A government guarantee is a necessity for World Bank funding. The bank's main emphasis historically has been on large infrastructure projects such as roads, dams, power plants, education, and agriculture.

b. International Finance Corporation (IFC)

The purpose of the IFC is to finance various projects in the private sector through loans and equity participations and to serve as a catalyst for flows of additional private capital investment to developing countries. In contrast to the World Bank, the IFC does not require government guarantees. It emphasizes providing risk capital for manufacturing firms that have a reasonable chance of earning the investors' required rate of return and that will provide economic benefits to the nation.

c. International Development Association (IDA)

The World Bank concentrates on projects that have a high probability of being profitable; consequently, many of the poorest of the less-developed countries (LDCs) are unable to access its funds. IDA was founded in 1960 to remedy this shortcoming. As distinguished from the World Bank, IDA is authorized to make soft (highly concessionary) loans (e.g., 50-year maturity with no interest). It does require a government guarantee, however.

8.2. Regional Development Banks

Regional development banks provide funds for the financing of manufacturing, mining, agricultural, and infrastructure projects considered important to development. They tend to support projects that promote regional cooperation and economic integration. Repayment terms for the loans, in most cases, are over a 5- to 15-year period at favourable interest rates.

The leading regional development banks include the following: *European Investment Bank* (EIB), *Inter-American Development Bank* (IADB), *Atlantic Development Group for Latin America* (ADELA), *Asian Development Bank* (ADB), *African Development Bank* (AFDB), *Arab Fund for Economic and Social Development* (AFESD), *European Bank for Reconstruction and Development* (EBRD), etc.

8.3. National Development Banks

Some national development banks concentrate on a particular industry or region; others are multipurpose. Although most are public institutions, there are several privately controlled development banks as well. The characteristics for success, however, are the same: They must attract capable, investment-oriented management; and they must have a large enough supply of economically viable projects to enable management to select a reasonable portfolio of investments.

9. Project Finance

The term “project finance” is used loosely by academics, bankers and journalists to describe a range of financing arrangements. The financing of a project is said to be nonrecourse when lenders are repaid only from the cash flow generated by the project or, in the event of complete failure, from the value of the project’s assets. Lenders may also have limited recourse to the assets of a parent company sponsoring a project.

Project financing can be defined as the raising of funds to finance an economically separable capital investment project in which the providers of the funds look primarily to the cash flow from the project as the source of funds to service their loans and provide the return of and a return on their equity investment in the project.

This definition highlights several key attributes of project financing

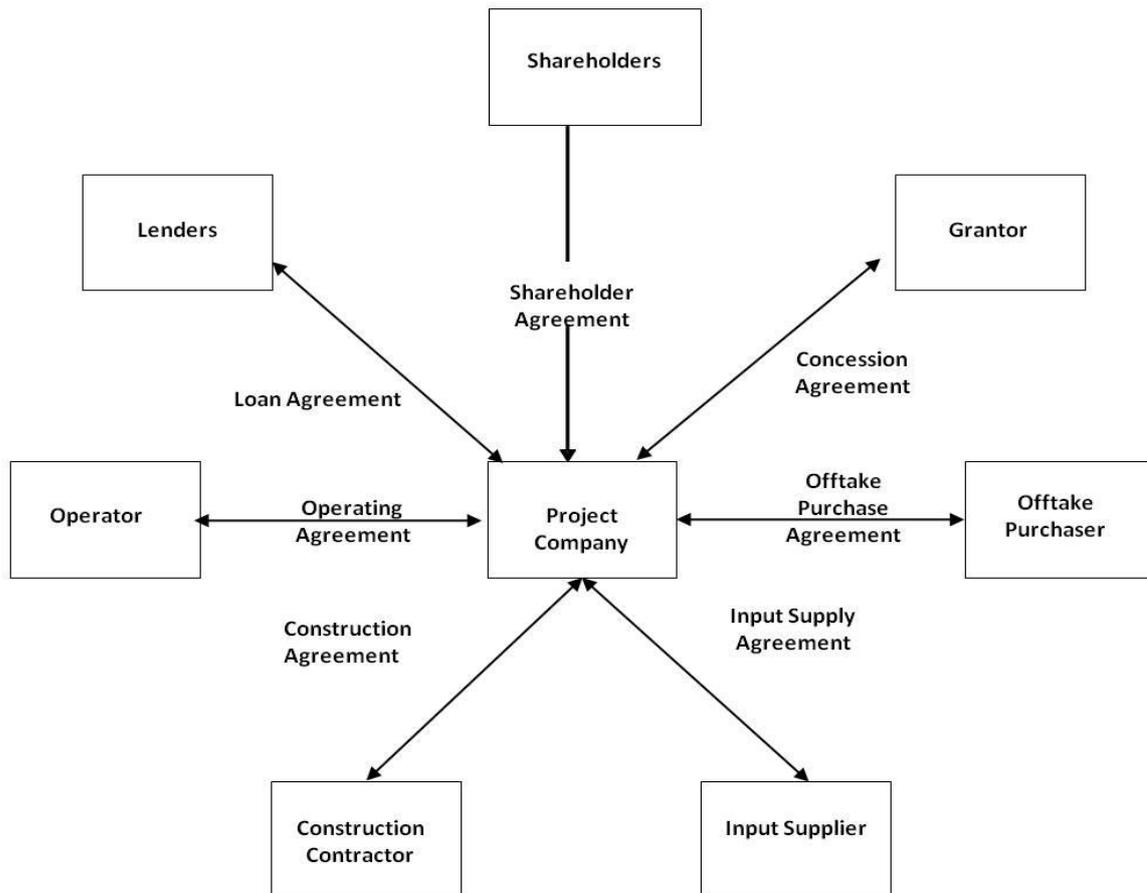
First, it focuses on the economically separable nature of investment projects suitable for project financing, such as power plants or pipelines.

Second, because projects are set up as legally independent entities, nonrecourse lenders have resort only to project assets and cash flows; they have no recourse to the sponsors.

Third, unlike the case for financial instruments such as mortgage-backed securities, the underlying assets in project finance are large, illiquid industrial assets.

Finally, although not specified in the definition, projects have a finite life, at the end of which all debt and equity investors are repaid.

Exhibit-2: Project Finance Structure



(Source: <https://ppp.worldbank.org/public-private-partnership/financing/project-finance-concepts>)

Typical Project Finance Structure

The typical project financing structure (simplified for these purposes) for a build, operate and transfer (BOT) project is shown below. The key elements of the structure are:

- Special purpose vehicle (SPV) project company with no previous business or record;
- Sole activity of project company is to carry out the project – it then subcontracts most aspects through construction contract and operations contract;
- For new build projects, there is no revenue stream during the construction phase and so debt service will only be possible once the project is on line during the operations phase (parties therefore take significant risks during the construction phase);
- Sole revenue stream likely to be under an off-take or power purchase agreement;
- There is limited or no recourse to the sponsors of the project (shareholders of project company are generally only liable up to the extent of their shareholdings);
- Project remains off-balance-sheet for the sponsors and for the host government.

10. The Euromarkets

The most obvious example of the globalization of financial markets is the rise of the Euromarkets. This term encompasses the Eurocurrency and Eurobond markets as well as the Euronote and Euro-commercial paper markets. Eurocurrency, Eurobonds, Euronote and Euro-commercial papers are financial instruments denominated in a currency other than that of the nations in which instruments are issued. Eurobonds are long term debt instruments denominated in a currency other than that of the country in which the instruments is issued. Euro-commercial papers are the unsecured short term debt instruments issued in a currency other than that of the country in which the instrument is issued. The major participants in these markets are large commercial and investment banks, multinational companies, central banks, and international financial organizations such as the International Monetary Fund (IMF) and World Bank. London is home to the most important Euromarket, but smaller ones exist in Paris, Brussels, and Frankfurt. The different components of the Euromarkets are discussed below:

10.1. The Eurocurrency Market

A Eurocurrency is a dollar or other freely convertible currency deposited in a bank outside its country of origin. Thus, U.S. dollars on deposit in London become Eurodollars. Note that the prefix *Euro* as used here has *nothing* to do with the currency known as the euro or with Europe. U.S. dollars on deposit in Montreal or Hong Kong are also Eurodollar deposits. These deposits can be placed in a foreign bank or in the foreign branch of a domestic U.S. bank. The Eurocurrency market then consists of those banks—called Eurobanks—that accept deposits and make loans in foreign currencies.

The Eurocurrency market is characterized by the absence of regulations (self-regulated) and exists because of regulations in different countries. The origin of the post-World War II Eurodollar market is often traced to the fear of Soviet Bloc countries that their dollar deposits in U.S. banks might be attached by U.S. citizens with claims against communist governments. Therefore, they left their dollar balances with banks in France and England.

10.2. Eurocurrency Loans

The most important characteristic of the Eurocurrency market is that loans are made on a floating-rate basis. Interest rates on loans to governments and their agencies, corporations, and nonprime banks are set at a fixed margin above LIBOR for the given period and currency

chosen. At the end of each period, the interest for the next period is calculated at the same fixed margin over the new LIBOR. For example, if the margin is 75 basis points (100 basis points equal 1%) and the current LIBOR is 6%, then the borrower is charged 6.75% for the upcoming period. The reset period normally chosen is six months, but shorter periods such as one month or three months are possible. The LIBOR used corresponds to the maturity of the reset period (e.g., six-month LIBOR, or LIBOR6, for a six-month reset period). Borrowing can be done in many different currencies, although the dollar is still the dominant currency.

10.3. Eurobonds

Eurobonds are similar in many respects to the public debt sold in domestic capital markets, consisting largely of fixed-rate, floating-rate, and equity-related debt. Unlike domestic bond markets, however, the Eurobond market is almost entirely free of official regulation and is instead self-regulated by the Association of International Bond Dealers. The prefix *Euro* indicates that the bonds are sold outside the countries in whose currencies they are denominated. Borrowers in the Eurobond market are typically well known and have impeccable credit ratings (e.g., developed countries, international institutions, and large multinational corporations like General Motors).

10.4. Note Issuance Facilities and Euronotes

Eurobanks have responded to the competition from the Eurobond market by creating a new instrument: the note issuance facility (NIF), called Euronotes. In a basic Euronote facility, a syndicate of banks commits to distribute the borrower's notes (the "Euronotes") for a specified period, typically 5 to 7 years, with maturities ranging between 1, 3, 6, and 12 months. Like commercial paper, notes under NIFs are unsecured short-term debt generally issued by large corporations with excellent credit ratings. Borrowers issue NIFs to raise short-term funds instead of borrowing from banks. These are underwritten by banks.

10.5. Euro Commercial Papers

Another innovation in nonbank short-term credits that bears a strong resemblance to commercial paper is the non-underwritten short-term Euronote, often called Euro-commercial paper (Euro-CP, for short). Although historically Euro-CP was mostly denominated in dollars, nondollar issues now account for more than two-thirds of all issues. Aside from the obvious benefit of allowing overseas subsidiaries to borrow in their local currencies, a multicurrency Euro-CP program also allows considerable scope for swap arbitrage. The euro

commercial papers are usually for longer term than US commercial papers. These are actively traded in a secondary market unlike US CPs which are held till maturity.

10.6. The Asiacurrency Market

This is the Asian counterpart of the Eurocurrency market. Although dominated by its European counterpart, the Asiacurrency (or Asiadollar) market has been growing rapidly in terms of both size and range of services provided. Located in Singapore, because of the lack of restrictive financial controls and taxes there, the Asiadollar market was founded in 1968 as a satellite market to channel to and from the Eurodollar market the large pool of offshore funds, mainly U.S. dollars, circulating in Asia. Its primary economic functions these days are to channel investment dollars to a number of rapidly growing Southeast Asian countries and to provide deposit facilities for those investors with excess funds. The market's fundamental problem is that Asian borrowers with a good international credit rating can raise money for longer, and less, in Europe or the United States.

Dragon Bond

The Asiabond counterpart in the Asiadollar market is the Dragon bond. It is the debt denominated in a foreign currency usually dollar, but launched, priced and traded in Asia. The first dragon bond was issued by the Asian Development Bank in 1991. It is no longer very popular.

Masala Bonds

These are Indian rupee-denominated bonds issued in offshore financial markets. The first masala bonds were issued by the International Finance Corporation (IFC) in 2014 when it raised ₹1000 crore bonds to fund Indian infrastructure projects. These were listed in the London Stock Exchange.

Courtesy:

Prof. Jita Bhattacharyya, Retired Professor, Department of Commerce, University of Calcutta

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International Finance

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Module – II

International Capital Budgeting

1. Introduction

Multinational Capital Budgeting has to take into consideration the different factors and variables which affect a foreign project and are complex in nature than domestic projects. Such problems include differences between project and parent company cash flows, foreign tax regulations, expropriation, blocked funds, exchange rate changes and inflation, project-specific financing, and differences between the basic business risks of foreign and domestic projects. The factors crucial in international capital budgeting decisions are:

- a. Cash flows from foreign projects have to be converted into the currency of the parent organization.
- b. Parent cash flows are quite different from project cash flows.
- c. Profits remitted to the parent firm are subject to tax in the home country as well as the host country.
- d. Effect of foreign exchange risk on the parent firm's cash flow.

- e. Changes in rates of inflation causing a shift in the competitive environment and thereby affecting cash flows over a specific time period.
- f. Restrictions imposed on cash flow distribution generated from foreign projects by the host country.
- g. Political risk in the form of changed political events reduces the possibility of expected cash flows.
- h. Concessions/benefits provided by the host country ensures the upsurge in the profitability position of the foreign project

2. Evaluating Foreign Projects in Capital Budgeting Process

Once a firm has compiled a list of prospective investments, it must then select from among them that combination of projects that maximizes the firm's value to its shareholders. This selection requires a set of rules and decision criteria that enable managers to determine, given an investment opportunity, whether to accept or reject it. The criterion of net present value is generally accepted as being the most appropriate one to use because its consistent application will lead the company to select the same investments the shareholders would make themselves, if they had the opportunity. But with the time some other methods have also been introduced to evaluate the foreign projects. These are discussed below:

a. Net Present Value

The net present value (NPV) is defined as the present value of future cash flows discounted at the project's cost of capital minus the initial net cash outlay for the project. Projects with a positive NPV should be accepted; projects with a negative NPV should be rejected. If two projects are mutually exclusive, the one with the higher NPV should be accepted.

The most desirable property of the NPV criterion is that it evaluates investments in the same way that the company's shareholders do; the NPV method properly focuses on cash rather than on accounting profits and emphasizes the opportunity cost of the money invested. Thus, it is consistent with shareholder wealth maximization.

b. Adjusted Present Value (APV)

Adjusted Present Value (APV) is used in evaluating foreign projects. The APV model is a value additive approach to capital budgeting process i.e. each cash flow is considered individually and discounted at a rate consistent with risk involved in the cash flow. Different components of the project's cash flow have to be discounted separately. The APV method uses different discount rates for different segments of the total cash flows depending on the degree of certainty attached with each cash flow. The financial analyst tests the basic viability of the foreign project before accounting for all complexities. If the project is feasible no further evaluation based on accounting for other cash flows is done. If not feasible, an additional evaluation is done taking into consideration the other complexities.

The APV model is represented as follows.

$$-I_0 + \sum_{t=1}^n \frac{X_t}{(1+k^*)^t} + \sum_{t=1}^n \frac{T_t}{(1+i_d)^t} + \sum_{t=1}^n \frac{S_t}{(1+i_d)^t}$$

Where I_0 → Present Value of Investment Outlay

$\frac{X_t}{(1+k^*)^t}$ → Present Value of Operating Cash Flow

$\frac{T_t}{(1+i_d)^t}$ → Present Value of Interest Tax Shields

$\frac{S_t}{(1+i_d)^t}$ → Present Value of Interest Subsidies

T_t → Tax Saving in year t due to financial mix adopted

S_t → Before tax value of interests subsidies (on home currency) in year t due to project specific financing.

i_d → Before tax cost of dollar dept (home currency)

3. Incremental Cash Flows in International Capital Budgeting Decisions

(Source: Shapiro, A.C., *Multinational Financial Management*, Wiley)

The most important as well as the most difficult part of an investment analysis is to calculate the cash flows associated with the project: the cost of funding the project; the cash inflows during the life of the project; and the terminal, or ending, value of the project. Shareholders are interested in how many additional dollars they will receive in the future for the dollars they lay out today. Hence, what matters is not the project's total cash flow per period, but the incremental cash flows generated by the project. The distinction between total and incremental cash flows is a crucial one. Incremental cash flow can differ from total cash flow for a variety of reasons. We now examine some of them.

a. Cannibalization

Cannibalization refers to the reduction of a product's sales due to the release of a newly created product. In other words, a newly introduced product line might take away market share from an existing product line instead of gaining overall market share for the company. When Honda introduced its Acura line of cars, some customers switched their purchases from the Honda Accord to the new models. This example illustrates the phenomenon known as cannibalization, a new product taking sales away from the firm's existing products. Cannibalization also occurs when a firm builds a plant overseas and winds up substituting foreign production for parent company exports. To the extent that sales of a new product or plant just replace other corporate sales, the new project's estimated profits must be reduced by the earnings on the lost sales.

b. Sales Creation

GM's auto plants in Britain use parts made by its U.S. plants, parts that would not otherwise be sold if GM's British plants disappeared. In this case, an investment either created or was expected to create additional sales for existing products. Thus, **sales creation** is the opposite

of cannibalization. In calculations of the project's cash flows, the additional sales and associated incremental cash flows should be attributed to the project.

c. Opportunity Cost

Project costs must include the true economic cost of any resource required for the project, regardless of whether the firm already owns the resource or has to go out and acquire it. This true cost is the opportunity cost, the maximum amount of cash the asset could generate for the firm should it be sold or put to some other productive use. It would be foolish for a firm that acquired oil at \$60 a barrel and converted it into petrochemicals to sell those petrochemicals based on \$60 a barrel oil if the price of oil has risen to \$150 per barrel. So, too, it would be foolish to value an asset used in a project at other than its opportunity cost, regardless of how much cash changes hands.

d. Transfer Pricing

The transfer prices at which goods and services are traded internally can significantly distort the profitability of a proposed investment. Whenever possible, the prices used to evaluate project inputs or outputs should be market prices. If no market exists for the product, then the firm must evaluate the project based on the cost savings or additional profits to the corporation of going ahead with the project.

e. Fees and Royalties

Often companies will charge projects for various items such as legal counsel, power, lighting, heat, rent, research and development, headquarters staff, management costs, and the like. These charges appear in the form of fees and royalties. They are costs to the project, but they are a benefit from the standpoint of the parent firm. From an economic standpoint, the project should be charged only for the additional expenditures that are attributable to the project; those overhead expenses that are unaffected by the project should not be included in estimates of project cash flows.

f. Getting the Base Case Right

The base case is the model's expected case, determined by using the assumptions that the project team consider are most likely to occur. In general, a project's incremental cash flows can be found only by subtracting worldwide corporate cash flows without the investment—the *base case*—from post investment corporate cash flows. To come up with a realistic base case, and thus a reasonable estimate of incremental cash flows, managers must ask the key question, "What will happen if we *don't* make this investment?" Failure to heed this

question led General Motors during the 1970s to slight investment in small cars despite the Japanese challenge; small cars looked less profitable than GM's then-current mix of cars. As a result, Toyota, Nissan, and other Japanese automakers were able to expand and eventually threaten GM's base business.

g. Accounting for Intangible Benefits

Intangibles such as better quality, faster time to market, quicker and less error-prone order processing, and higher customer satisfaction can have tangible impacts on corporate cash flows, even if they cannot be measured precisely. Similarly, many investments provide intangible benefits in the form of valuable learning experiences and a broader knowledge base.

4. Issues in Foreign Investment Analysis

Along with incremental cash flows the analysis of a foreign project raises two additional issues. These are:

- a. Should cash flows be measured from the viewpoint of the project or that of the parent?
- b. Should the additional economic and political risks that are uniquely foreign be reflected in cash-flow or discount rate adjustments?

a. Parent versus Project Cash Flows

There exists a big difference between the project and parent cash flows due to tax rules, exchange controls. Management and royalty payments are returns to the parent firm. The basis on which a project shall be evaluated depend on one's own cash flows, cash flows accruing to the parent firm or both.

Evaluation of a project on the basis of own cash flows entails that the project should compete favourably with domestic firms and earn a return higher than the local competitors. If not, the shareholders and management of the parent company shall invest in the equity/government bonds of domestic firms. Project evaluation based on local cash flows avoid currency conversion and eliminates problems associated with fluctuating exchange rate changes.

A strong theoretical argument exists in favour of analysing any foreign project from the view point of the parent. Cash flows to the parent are ultimately the basis for dividend to the

shareholders, reinvestment elsewhere in the world, repayment to the corporate-wide debt and other purposes that affect firm's many interest groups. However, since most of a project's cash flow to its parent or to sister subsidiaries are financial cash flows rather than operating cash flows, the parent viewpoint usually violates a fundamental concept of capital budgeting, namely the financial cash flow should not be mixed with operating cash flows.

In reality, most firms appear to evaluate foreign projects from both parent and project viewpoints. The parent's viewpoint gives results closer to the traditional meaning of net present value in capital budgeting. Project valuation provides closer approximation of the effect on consolidated earnings per share, which all surveys indicate is of major concern to practicing managers.

b. Political and Economic Risk Analysis

All else being equal, firms prefer to invest in countries with stable currencies, healthy economies, and minimal political risks, such as expropriation. All else is usually not equal, however, and so firms must assess the consequences of various political and economic risks for the viability of potential investments. The three main methods for incorporating the additional political and economic risks, such as the risks of currency fluctuation and expropriation, into foreign investment analysis are (a) shortening the minimum payback period, (b) raising the required rate of return of the investment, and (c) adjusting cash flows to reflect the specific impact of a given risk.

5. Political Risk Analysis

Political risk is the risk that a government action will negatively affect a company's cash flows. In its most extreme form, governments seize property without compensating the owners in a total expropriation (or nationalization). The general approach recommended for incorporating political risk in an investment analysis usually involves adjusting the cash flows of the project (rather than its required rate of return) to reflect the impact of a particular political event on the present value of the project to the parent. Generally, political risk services examine indicators of political risk, such as the following:

- (i) Political stability (for example, the number of different governments in power over time).

- (ii) Ethnic and religious unrest; the strength and organization of radical groups.
- (iii) The level of violence and armed insurrections; the number of demonstrations.
- (iv) Enforcement of property rights.
- (v) The extent of xenophobia (fear of foreigners); the presence of extreme nationalism.

The MNCs used to face two types of problems comes out of extreme political risks, i.e. expropriation and blocked fund. These are discussed below:

a. Expropriation

The most extreme form of political risk is the possibility that the host country takes over an MNC's subsidiary, with or without compensation. This is the worst-case scenario for firms. Expropriation is an obvious case where project and parent company cash flows diverge. Outright expropriations used to be common: Regimes in Eastern Europe (after World War II) and in Cuba (in 1960) expropriated private businesses, both domestic and foreign. More recently, Venezuela has systematically expropriated foreign businesses as part of President Chavez's socialist revolution. In 2010, the Venezuelan government expropriated the equipment of the U.S. oil services company Helmerich & Payne, the Venezuelan operations of Owen-Illinois, a U.S. glassware manufacturer, and the Spanish agricultural firm Agrosleña.

The approach suggested here examines directly the impact of expropriation on the present value of the project to the parent. The example of United Fruit Company shows how the technique of adjusting expected cash flows can be used to evaluate how expropriation affects the value of specific projects.

Illustration-1

Suppose that United Fruit Company (UFC) is worried that its banana plantation in Honduras will be expropriated during the next 12 months. The Honduran government has promised, however, that compensation of \$100 million will be paid at the year's end if the plantation is expropriated. UFC believes that this promise would be kept. If expropriation does not occur this year, it will not occur any time in the foreseeable future. The plantation is expected to be worth \$300 million at the end of the year. A wealthy Honduran has just offered UFC \$128 million for the plantation. If UFC's risk-adjusted discount rate is 22%, what is the probability

of expropriation at which UFC is just indifferent between selling now or holding onto its plantation?

(Source: Shapiro, A.C., *Multinational Financial Management*, Wiley)

Solution:

Exhibit below displays UFC’s two choices and their consequences. If UFC sells out now, it will receive \$128 million today.

Alternatively, if it chooses to hold on to the plantation, its property will be worth \$300 million if expropriation does not occur and worth only \$100 million in the event the Honduran government expropriates its plantation and compensates UFC.

If the probability of expropriation is p , then the expected end-of-year value of the plantation to UFC (in millions of dollars) is $100p + 300(1 - p) = 300 - 200p$.

The present value of the amount, using UFC’s discount rate of 22%, is $(300 - 200p)/1.22$.

Setting this equal to the \$128 million offer by the wealthy Honduran yields a value of $p = 72\%$.

In other words, if the probability of expropriation is at least 72%, UFC should sell out now for \$128 million. If the probability of expropriation is less than 72%, it would be more worthwhile for UFC to hold on to its plantation.

Exhibit

United Fruit Company’s Choices (U.S. \$ Millions)

	Expropriation	No Expropriation	Expected Present Value
Sell out now	128	128	128
Wait	100	300	$[100p + 300(1 - p)]/1.22$

b. Blocked Funds

‘Blocked Funds’ are balances held in foreign countries that cannot be remitted to the parent due to Exchange Control regulations. Apart from this, it is quite possible that significant costs in the form of local taxes or withholding taxes arise at the time of remittance of the funds to the parent country. Such ‘blocked funds’ are indirect. If a parent company can release such ‘Blocked Funds’ in one country for the investment in a overseas project, then such amounts will go to reduce the ‘Cost of Investment Outlay’. The initial investment will be net of any ‘Blocked Funds’ that can be made use of by the parent company for investment in the project.

In any discussion of blocked funds, it must be pointed out that if all funds are expected to be blocked in perpetuity, then the value of the project is zero.

Illustration-2:

On January 01, 2019, the Italian telecom authority expropriated a network service provider owned by ABC Ltd., an American operator of foreign telecom facility. In compensation, a perpetuity of \$ 100 million will be paid annually at the end of each year. ABC Ltd believes, however, that the Italian Central Bank may block currency repatriations during the calendar year 2021, allowing only 70% of each year's payment to be repatriated (and no repatriation of investment from other 30%). Assuming a cost of capital of 25% and a probability of currency blockage of 40%, what is the current value (on January 01, 2019) of Italy's compensation?

Solution

If currency controls are not imposed, ABC Ltd will receive \$ 100 million annually at the end of each year starting from 01.01.2019.

The present value of this stream of cash flow equals to \$ 400 million ($100/0.25$).

Alternatively, if controls are imposed, ABC Ltd will receive \$ 100 million at the end of first two year and \$ 70 million (100×0.70) on each December 31st thereafter.

The present value of this cash flow is-

$$[100/1.25 + 100/(1.25)^2 + (70/0.25)/(1.25)^2]$$

$$=80+64+179.2$$

$$=323.2 \text{ i.e. } \$ 323.2 \text{ million.}$$

Weighting these present values by the probability that each will come to pass yields an expected present value of $[0.6 \times 400 + 0.4 \times 232.2] = 369.28$.

So, the current value (on January 01, 2019) of Italy's compensation will be \$ 369.28 million.

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