

## The Function and Science of Financial Management Studies

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**Abstract**—Financial planning is concerned about a good projection of future financial requirements of the firm in order to avoid short falls in financing availability. Financial analysis will help in pinpointing problem areas that have to be resolved.

Investment decision is crucial since this involves the choice among investment projects of the one which will yield the highest benefit for the firm in terms of profitability. After choosing the best investment project, the financial manager is confronted with the financing decision. What financing package should be chosen to finance the project. Financing may come from borrowings (bank loans or bonds) or from flotation of equity (common and/or preferred stocks). The financing package which will result in the highest earnings per common share (EPS) should be chosen.

Financial Management is concerned with the goal of maximizing stockholders' wealth expressed by the market price of corporate stocks. Market price of stocks can be increased by improved business profitability and by means of various financial maneuverings which should be an expertise of financial managers.

Financial managers should engage in financial analysis and planning, and balance sheet management (managing the firm's assets, liabilities and capital). He is involved in investment decision and financing decision.

Current Asset Management involves the proper handling of cash and marketable securities, account receivable and inventory in order to minimize the costs of investment in these assets.

Sources of short-term financing are analyzed based on their costs. The source with lowest cost should be chosen as the best alternative. Working capital requirements usually need short-term financing.

Leasing, merger and dividend policy are also discussed as supplementary topics.

**Keyword:** Budgeting, Break-even, Economic Order Quantity, Capital Budgeting, Merger

### I. INTRODUCTION

An understanding of financial statements is necessary in order to have an adeptness in the mechanics of finance. The goal of the financial manager is the maximization of shareholders' wealth expressed by the market price of corporate stocks [4]. Market price of stock would increase not only because of improvement in business profitability but also by means of various financial maneuverings which must be an expertise by financial managers. In order to achieve the goal of maximizing shareholders' wealth, the financial manager must engage in financial analysis and planning and balance sheet management (managing the firm's assets, liabilities and equity).

### II. FINANCIAL ANALYSIS AND PLANNING

Financial analysis will point problem areas in operations which would need management's attention. These problem areas can be known through the use of financial ratios which are grouped under four categories: liquidity ratios, activity ratios, solvency ratios, and profitability ratios. Are there enough funds to meet working capital requirements? Are there no over-investment in receivables and inventory? Are assets efficiently utilized in the generation of sales? Who are the major financiers of business assets – the owners or the creditors? The answer to this question would determine the extent of solvency risks. Is the business earning a reasonable amount of profit? These are sample questions which financial ratios would engage to answer. These indicators would prod management to take courses of action that would improve adverse conditions.

Budgeting is a tool used in financial planning. This tool involves the preparation of projected income statement, balance sheet and cash flow statement. Income projection is necessary in order to determine the amount of cash that can be generated from operations. Projection of the cash flow will incorporate the amount of cash generated from operations and other sources of cash as well as uses of cash other than working capital requirements. The resulting cash balance in the cash flow statement will give us an idea whether borrowings are necessary in order to finance cash requirements of subsequent operating periods.

Break-even analysis is a tool in profit planning. Under break-even analysis, we would be able to determine the amount of sales we should generate if we desire to earn a certain amount of profit. Under break-even condition, revenues are equal to costs, thus

$$QP = FC + QUVC$$

Where: Q = sales in units at break-even condition

P = selling price per unit

FC = fixed costs

UVC = unit variable cost

Therefore:  $QP - QUVC = FC$   

$$Q = \frac{FC}{P - UVC}$$

(P - UVC) is the unit contribution margin expressed in peso [10]. Unit contribution margin can also be expressed as a percentage of unit selling price. If we divide fixed costs by the unit contribution margin expressed as a percentage of unit selling price, we would get the break-even sales in peso. If we desire a certain amount of net profit before tax, we would be able to determine the desired sales that would generate desired profits, thus

$$\text{Desired Sales} = \frac{FC + \text{Desire Net Profit Before Tax}}{\text{Unit Contribution Margin as a Percentage of Unit Selling Price}}$$

With the above formula, we have analyzed the way by which break-even analysis can be used as a tool in profit planning [8].

Then we come to short-term financial decisions which involve management of current assets (cash and marketable securities, account receivables and inventory) and the determination of appropriate sources of short-term financing.

### III. MANAGEMENT OF CASH AND MARKETABLE SECURITIES

Management of cash involves the maximization of cash balance that the firm should have in its treasury in order to maximize interest revenue that would be generated from short-term investment. This involves speeding up collections and showing down disbursements and cash planning. Some ways to speed up collections are:

1. Establishment of collection centers if sales outlets are numerous.
2. Depositing of collections by collection centers in nearest bank.
3. Presentment of checks for payment to the drawee bank (or direct sent).

Disbursement can be slowed down by playing the float and by controlled disbursement. An example of playing the float is the payment by check drawn on a bank located far from the business location of the payee. This will increase the time between the drawing of the check and its being debited in the payors account in the drawee bank. An example of controlled disbursement is the estimation of the amount to be deposited to the company's bank account in order to meet payment of payroll checks. If weekly payroll, say, is paid by check every Saturday,. Not all the employees are expected to present their checks on the following

Monday. A percentage of the total payroll checks is estimated to be presented on Monday, Tuesday, Wednesday, etc. This estimate of the checks to be presented on a particular day will be backed up by the appropriate amount of bank deposit.

Proper cash planning begins with the estimation of the minimum operating cash (MOC) level. MOC is estimated by dividing annual cash expenditures or total annual outlays (TAO) of the firm by its cash turnover (CT). Cash turnover is 360 days divided by cash cycle (CC). CC is average age of inventory plus average collection period minus average payment period. The firm should maintain at all times only this MOC level in order to have more cash to be placed in short term investments. If the MOC level is not properly determined, the firm may be maintaining cash level over and above the minimum requirement and thus misses the opportunity to have more cash in short term investments. MOC can be reduced by stretching accounts payable, increasing inventory turnover and speeding up collections.

The optimum cash to be converted from marketable securities can also be determined if we consider the minimization of brokerage cost to buy and sell marketable securities and amount of lost opportunity to earn interest revenue from marketable securities due to maintaining cash.

An example is appropriate at this point. If annual cash expenditures is P12M and cash turnover is 3 then

$$MOC = \frac{P12M}{3} = P4M \text{ for 4 months or P1M per month}$$

If brokerage cost is P100 and annual interest on short-term marketable securities is 12%, optimum cash to be converted to marketable securities during a month is:

Optimum Cash per conversion from marketable securities

$$= \sqrt{\frac{2(1M) \times 100}{.01}} = P141,421$$

This means that the number of times that marketable securities should be converted to cash during a month is P1,000,000 - P1141,421 = 7 times. At P141,421 per conversion, brokerage fees and lost revenue are minimized and are equal or approximates each other, viz:

$$\text{Total Cost} = 100(7) + \frac{141,421(0.01)}{2} = 700 + 707 = 1,407$$

### IV. MANAGEMENT OF ACCOUNT RECEIVABLE

The criteria for the granting of credit to customers are the five C's of credit namely, capital, character, capacity, collateral and condition. These criteria are the basis for determining a customer's credit strength and his worthiness to obtain credit. This is the essence of a good credit analysis.

A firms credit policy serves as a guideline in extending credit to customers [9]. It normally contains the credit standards that should be followed: each customer is given credit scores in terms of credit references, home ownership, income range, payment history and years on job. Depending on these credit scores, decision will be determined whether to extend standard credit terms, to extend limited credit or to reject the application.

The standard credit terms, contained in credit policies, are chosen from various alternatives. A prospective credit term embodies the credit period, cash discount, cash discount period and an estimate of bad debts. Evaluation of alternative credit terms is based on the net profit obtainable from each. The key variables in determining the net profit are the profit contribution from sales, cost of investment in account receivable and cost of bad debts. The credit term which gives the highest net profit will be chosen as the standard credit term.

After the establishment of credit standards, the firm must formulate procedures for credit analysis – the evaluation of customers applying for credit. The procedures revolve around the obtaining of credit information and the analysis of these credit information. Credit information can be obtained from applicant's financial statements, credit reporting agencies, direct credit information exchanges, banks checking and court checking. In analyzing credit information, the usual analysis of financial statements will be done to determine the viability of the applicant's business and his capacity to pay the amount of credit applied for. Non quantifiable matters may also be used in the credit evaluation particularly the checking on the applicant's personal life and habits, business dealings as well as the possibility of being a defendant in a legal case.

A collection policy is necessary for the speedy collection of receivables. Alternative collection policies involve various levels of collection efforts with their respective cost. The cost of a level of collection efforts is compared with the amount of reduction in bad debts and the reduction in cost of investment in accounts receivable and this would yield a net benefit. That level of collection efforts that yield the highest net benefit shall be chosen as the best collection policy. Collection expenditures are those connected with maintaining a collection staff and the type of collection procedures employed – letters, personal visits, telephone calls, collection agencies and legal action. The credit analyst would know the effectiveness of a collection policy through the determination of average collection period and the aging of accounts receivable.

#### V. MANAGEMENT OF INVENTORIES

Management of inventories involves the minimization of cost related to ordering stocks and the cost to carry them. What is that order size which would equate ordering cost and carrying cost [1],

$$\frac{D}{Q} O = \frac{Q}{2} C$$

$D = \text{Annual usage or demand}$   
 $Q = \text{Economic order quantity}$   
 $O = \text{Ordering cost}$   
 $C = \text{Carrying cost}$

$$2DO = Q^2 C$$

$$Q^2 = \frac{2DO}{C} \rightarrow Q = \sqrt{\frac{2DO}{C}}$$

At Q or Economic Order Quantity ordering cost and carrying cost are equal and at the minimum point. Any order size other than Q would result in a higher total of ordering and carrying cost.

$$\text{Let } D = 200,000 \quad Q = \sqrt{\frac{2(200,000)(10)}{1}} = 2,000$$

$$O = P1$$

$$C = P1$$

$$\text{Ordering Cost} = \frac{200,000}{2,000} \times 10 = P1,000$$

$$\text{Carrying Cost} = \frac{2,000}{2} \times 1 = P1,000$$

	<u>Order Sizes</u>		
	<u>1,000</u>	<u>2,000</u>	<u>4,000</u>
Ordering Cost	2,000	1,000	500
Carrying Cost	500	1,000	2,000
Total	<u>2,500</u>	<u>2,000</u>	<u>2,500</u>

But if quantity discounts are offered by the supplier, sometimes it would not be advisable to order at EOQ. An example would clarify this:

If quantity discount of 2% is offered for every purchase lot of 2,500 units and 3% for 4,000 units, what is the order size which would give the lowest total of ordering and carrying costs and purchase costs. Purchase per unit is P200.

* Ordering Costs:	<u>at EOQ</u>	<u>at 2,500</u>	<u>at 4,000</u>
1.	1,000		
2.		800	
3.			500
* Carrying Costs:			
1.	1,000		
2.		1,250	
3.			2,000
* Purchase Cost:			
1.	200,000 X 2	400,000	
2.	200,000 X 2 X .98	392,000	
3.	200,000 X 2 X .97		388,000
Total	<u>402,000</u>	<u>394,050</u>	<u>390,500</u>

Therefore the order size that should give the lowest total cost is 4,000 units.

When to place an order is another vital question which good inventory management should consider. The point in time which is appropriate to place an order is determined by the reorder point (ROP). ROP is the number of days it takes from the time of placing an order up to the time of receipt of the ordered goods multiplied by the estimated usage per day plus safety stock.

Sometimes estimated demand may be more than the EOQ which is considered as normal demand for a certain period. The probability of each amount of demand is estimated based on past experience. The optimum safety stock is that level where the total of stock out costs and carrying costs of the safety stock as at the lowest.

Thus, if safety stock is maintained, the cost to carry this safety stock will be an additional to the total cost to order and carry the EOQ.

## VI. SOURCES OF SHORT-TERM FINANCING

In order to finance the working capital requirements of the firm, various sources can be tapped. Again the costs of these sources in terms of interest is the major consideration in determining which source should the firm use. The lowest cost or interest would be the logical choice.

Trade credits and accruals are sources which have no cost. Lines of credit, revolving credit agreements, secured and unsecured bank loans and factoring of receivables are some of these sources of short-term financing.

## VII. CAPITAL BUDGETING AND LONG-TERM FINANCE

After looking at the proper management of the current portion of the balance sheet, we now turn to how to properly manage the long-term portions namely the long-term investments and long-term debt and capitalization. The understanding of the mechanic involved in various capital investment decision presupposes a sufficient background on the time value of money.

Investment decision involves the selection among various investment projects of that one which would yield the highest return [6]. Afterwards, the question of how to finance the selected investment project shall now be considered. Shall it be financed by debt or equity? Debt may be in the form of bonds or long-term bank loans. Equity may be in the form of issuance of additional common or preferred stock. The decision will be based on how a form of financing will affect earning per share (EPS) which is the determinant of market price per share. The form of financing which will result in the highest EPS will be chosen.

Sources of long-term financing have costs. The cost of bond issue is its interest rate net of tax savings to due to inclusion of interest payment among expenses thus reducing net income subject to tax.

The cost of common stock is derived by the following formula:

$$K_j = \frac{D_1}{P_0} + g$$

$K_j$  = cost of common stock

$D_1$  = dividend per share expected at the end of the year 1

$g$  = constant rate of growth in dividends

$P_0$  = current price of common stock

\* Essentially a firm is a complex investment project financed by a capital structure.

The cost of preferred stock is derived by the following formula:

$$K_p = \frac{D_p}{P_p}$$

$K_p$  = cost of preferred stock

$D_p$  = annual preferred stock dividend

$N_p$  = proceeds from sale of preferred stocks net of flotation costs

The cost of a long-term bank loan is derived in the same way as the cost of a bond issue.

Suppose a project costing P500,000 can be financed by the following alternatives:

30% debt, 70% common equity

60% debt, 40% common equity

40% debt, 30% common equity and 30% preferred equity.

Interest rate on debt is 10%, par value per common share is P20, annual preferred stock dividend is 12% and par value per preferred share is P30. The following table will show the calculations of EPS under the three financing alternatives.

	1	2	3
Earning before Interest & Taxes (hypothetical) – EBIT	100,000	100,000	100,000
Interest	15,000	30,000	20,000
Earnings before taxes	85,000	70,000	80,000
Income taxes (40%)	34,000	28,000	32,000
Earning after taxes	51,000	42,000	48,000
Preferred stock dividend	-	-	18,000
Earning available to common stockholders	51,000	42,000	40,000
Earnings per share →	2.91	4.20	5.33

From the above table, we see that the third alternative is the best which will give us the highest EPS at P5.33.

Next, we have to determine the weighted average cost of this capital structure. Assuming that the cost of common stock is 14% and that of preferred stock is 10%. The cost of debt is .10 (1 – 0.4) or 6%, 40% or 0.4 is tax rate.

Sources	Amount	Proportion	Cost	WACC*
Debt	200,000	40%	6%	2.4%
Common	150,000	30%	14%	4.2%
Preferred	150,000	30%	10%	3.0%
Total	500,000	100%		9.6%

Suppose, the project has a ten year life and with annual cash inflow of P150,000. This cash inflow should be discounted at the WACC at 9.6% which should be considered as the \*Weighted average cost of capital hurdle rate. The project must earn at least the cost of financing it. At 9.6% hurdle rate, the present value of P150,000 annual cash inflow for 10 years is P937,710 (150,000 x 6.2514). The net present value therefore of this project is P437,710 (P937,710 – project cost of P500,000).

Various alternative projects will be analyzed in terms of net present value (NPV). The project with the highest NPV will be chosen as the most profitable project.

Sometimes funds available would be able to finance more than one project. The problem is how to ration this available fund. The following are projects with different costs but all with 10-year lives. Their cash inflows are discounted at the same rate of 9.6%.

Project	Costs	PV of Cash Inflow	NPV	PI*
A	500,000	937,710	437,000	1.88
B	400,000	460,000	60,000	1.15
C	250,000	282,500	32,500	1.13
D	350,000	388,500	38,000	1.11
E	300,000	324,000	24,000	1.08

\* Profitability Index = Cash Inflow / Cost

If available funds amounts to P900,000, then the possible combination are A & B and C, D & E. Which of these combinations is better is determined by using as basis the weighted average profitability index (WAPI):

$$A \ \& \ B: \ WAPI = \frac{500,000}{900,000} (1.88) + \frac{400,000}{900,000} (1.15) = 1.555$$

$$C,D\&E:WAPI = \frac{250,000}{900,000} (1.88) + \frac{350,000}{900,000} (1.11) + \frac{300,000}{900,000} (1.08) = 1.1056$$

From the above, the better combination is A & B where WAPI is 1.555.

A project can be gauged as acceptable not only through a positive “NPV” but also through its internal rate of return (IRR) which should be higher than the hurdle rate or the required rate of return [3]. The IRR is that rate which if the cash inflows or cash income of a project are discounted by said rate, will result in a present value of cash inflows equal to the cost of the project.

Projects with the same lives and hurdle rates are comparable in terms of net present value. This is our assumption for investment evaluation and capital rationing purposes. Under capital rationing, it is assumed that the projects have different EBITs and cash incomes but with the same capital structure for financing or hurdle rate.

Projects with different lives and hurdle rates are also comparable for investment evaluation and capital rationing purposes. This can be done by deriving the NPV of the infinite lived alternative (NPV<sub>∞</sub>).

#### VIII. LEASING

Leasing an equipment or a real estate property (land and building) is an alternative in order to have the rightful use of an asset. Instead of buying the property, leasing may be a better alternative [5]. The analysis involves the comparison of the resultant total cash outflow for the alternative to buy and the alternative to lease.

The lease payment is an operating outlay and thus would contribute in the decrease of net income which in turn would mean a saving in tax. This tax saving is called tax shield on lease payments. The lease payment per period net of the tax savings will be discounted at whatever is the cost of fund in order to determine its present value. Thus, the total present value of all lease payments during the term of the lease will be determined and compared with the present value of the cash outflows involved in buying the asset.

The money for the lease payments may be borrowed from banks or may come from the company’s retained earnings account. Thus, the cost of fund may be at the bank’s interest rate or at the cost of common stock or equity since the cost of retained earnings is the same as the cost of common equity.

When the company borrows money in order to buy the property, the company will pay interest for the borrowed money, for insurance, and will incur depreciation expense during the useful life of the asset. These payments on interest and insurance and depreciation expense will decrease net income, thus tax savings will be obtained. The tax savings is the tax rate multiplied by the total expenses. The net cash outflow for each of the period of the loan term is the loan amortization net of this tax saving. The net cash outflows will be discounted at the interest rate of the loan. Thus the total present value of all the net cash outflows is determined.

The alternative with the lower total present value of cash outflows will be chosen as the better alternative.

If the payment for the purchase price of the property will not be borrowed but will come from the coffers of the company. Then the purchase price will be the basis for comparison with the lease alternative.

#### IX. MERGER AND ACQUISITION

A company may decide to acquire another company if it foresees that this acquisition would increase profitability in the future to be reflected in an increasing earning per share (EPS).

The company will acquire the common stock of another firm at a certain price usually t a price higher than its market price in order to attract the other firm’s stockholders to sell [7]. The ratio between the acquiring firm’s stock price and offered price for the stock of the firm to be acquired is determined in order to derive the number of common shares that will be exchanged for the common shares of the firm to be acquired. The combined earnings of the two firms will be divided by the resulting number of common shares after the merger to determine the EPS of the merged company.

Unless the EPS after merger is expected in the future to be higher than the EPS without the merger, then it is not desirable to merge.

#### X. DIVIDEND POLICY

The consideration in formulating the dividend policy of the firm is the trade off involved between availability of funds for investment to increase earnings and the dilution of ownership if the investment project will be financed through flotation of additional common shares if long-term debt financing is not available or not viable. Common stockholder will allow the reinvestment of retained earnings instead of declaring dividends for themselves in expectation of future higher earning per share and in order to avoid dilution of ownership [2].

#### XI. CONCLUSION

The owners of a corporation are normally distinct from its managers. Actions of the financial manager should be taken to achieve the objectives of the firm’s owners, its stockholders. In most cases, if financial managers are successful in this endeavor, they will also achieve their own financial and professional objectives. Financial managers actively manage the financial affairs of any type of businesses—financial and nonfinancial, private and public, large and small, profit-seeking and not-for-profit. They perform such varied financial tasks as planning, extending credit to customers, evaluating proposed large expenditures, and raising money to fund the firm’s operations. In recent years, changing economic, competitive, and regulatory environments have increased the importance and complexity of the financial manager’s duties. Today’s financial manager is more actively involved in developing and implementing corporate strategies aimed at “growing the firm” and improving its competitive position. As a

result, many top executives have come from the finance area.

#### REFERENCES

- [1] Anthony, R, Glenn A, Welsch and James S. Reece, (1985), *Fundamentals of Management Accounting*, Homewood, Illinois: Richard D. Irvin, Inc, p.407.
- [2] Barclay, Michael J., Clifford W. Smith and Ross L. Watts (1995), "The Determinants of Corporate Leverage & Dividend Policies" *Journal of Applied corporate Finance* 7, p.8
- [3] Cleary, Sean (1999), "The Relationship between Firm Investment and Financial Status," *Journal of Finance* 54, p.79
- [4] Gitman, Lawrence J. (1987), *Basic Managerial Finance*, New York: Harper and Row publishers, p.13.
- [5] Grenadier, Steven R. (1996), "Leasing and Credit Risk", *Journal of Financial Economics* 42, p.348
- [6] Harris, Milton and Artur Raviv (1996), "The Capital Budgeting process: Incentives and Information." *Journal of Finance* 51, p.1148
- [7] Kaplan, Steven N., and Michael S. Weisbach (1992), "The Success of Acquisitions: Evidence from Divestitures." *Journal of Finance* 47, p.112
- [8] Ran, D. L. (1964), *The Limitations of Profit Graphs, Breakeven Analysis & Budgets*, *Accounting Review* 39, p.928
- [9] Van Horne, James C. (2002), *Financial Management and policy*. New Jersey: Prentice Hall, p.449.
- [10] Weston, J. Fred and Eugene F. Brigham (1981), *Managerial Finance*, Illinois: The Dryden Press, p.233.