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FUNDS MANAGEMENT*

FINANCE MANAGEMENT is the decision-level responsibility for funds generation, fund allocation, capital structuring, and profit supervision. It is concerned with:

1. *Liquidity* (availability of sufficient cash for the payment of every obligation on due date),
2. *Solvency* (sufficiency of realizable assets to meet all liabilities and claims from creditors),
3. *Profitability* (benefits from operations in the form of revenue for the period being in excess of all charges for the period, and from investments in the form of either interest income or dividends and/or capital appreciation), and
4. *Financial control* (responsibility for assets being adequate and effectively utilized for the attainment of corporate objectives, and responsibility for corporate, financial results as adequate returns on stockholders' investment).

The term *funds* is often understood to mean cash or money, but a more accurate definition would be "the means of payment" (because some payments may not involve the use of cash but of other financial modes, or else are through bookkeeping entries).

Finance management includes:

1. The *financing decision* (sourcing for funds sufficient in amount and at acceptable cost),
2. The *investment decision* (allocation of funds among uses which will generate the desired returns), and

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3. The *dividend decision* (distribution of adequate returns to investors for providing the funds and assuming the risks).

The finance management responsibility involves:

1. Financial planning,
2. Analysis of financial performance, and
3. Direction of financial operations.

Capital Structures

Financial planning involves determining the optimum capital structure (debt-equity mix) and the sources and uses of funds. To finance an enterprise means to provide it with adequate productive capital in the form of current assets and fixed assets. Such capital (or assets, or resources) is accumulated wealth utilized for productive purposes with the object of improving the net worth of the investor.

Capital would originally come from two sources:

1. Owners of the enterprise (*equity capital*), and
2. Lenders (*borrowed capital*)

The enterprise is capitalized by its owners in consideration of the prospects of earning dividends, and by its creditors in consideration of receipt of long-term interest.

In the course of operations, profits (or losses) are generated and result in additions to capital (if the enterprise is profitable) or in a decrease in capital (if unprofitable). Thus, we come to have a third source of capital: the operations of the business giving rise to *generated capital*, which in part is retained in the business.

for purposes of expansion, and the balance distributed as dividends to the corporate owners.

All the foregoing is, of course, very elementary but we should at all times bear it in mind so that our attention is centered on the optimum profitability of our enterprise. An incurred loss is a reduction in capital suffered by the stockholders, and there is a limit to the losses which can be absorbed before the enterprise collapses.

At our level of work, we may at times think that finance management is beyond our scope and what we do has little bearing on the final bottom-line figure for the business. But we should always remember that the whole is merely the sum of its parts, and *all* of us contribute (or detract) from that profitability because we all are part of the enterprise. If all of us are productive or efficient, then the end result will be a totality of positive contributions towards profitability.

We are productive or efficient when the value of our output is greater than the value of our input, and the difference is our personal contribution to profitability. In management language, productivity is represented as:

$$V_o > V_i \quad \text{where, } V_o = \text{value output} \\ V_i = \text{value input}$$

or, stated differently,

$$\frac{V_o}{V_i} > 1.$$

Speaking of values, we are promoted on the basis of the perceived value of our present performance *and* the anticipated value of our future performance at the higher level of work. This is our personal contribution towards the end result; hence, we should do our best at all times to be personally productive in our work and prepare ourselves for the more difficult assignments.

Tools of Finance Management

For finance management functions, the manager uses the following tools:

1. Operating statements to measure income, costs, expenses, and profits,
2. Operating margins to identify the components of gross sales as percentage of sales,
3. Comparative operating statements to compare results for the current period against those of earlier periods and our results against those of others in the same or other lines of business,
4. Industry standards for financial results,
5. Balance sheet analysis (comparative studies, ratios, aging, projections),

6. Operations budget to forecast sales, costs, expenses, and profits,
7. Capital budget to forecast capital expenditures and to plan the sources of long-term funds, and
8. Cash budget to forecast short-run cash flows and working capital requirements.

Acquisition of Funds

The choice between equity funds and borrowed funds would be governed by:

1. Period of the obligating agreement,
2. Priority of claim or preference on income,
3. Priority of claim or preference on assets, and
4. Participation or voice in management.

The optimum debt-equity mix would yield the objectives of the project at less cost. The debt-to-equity ratio would be influenced by the following considerations:

1. *Suitability.* The type of fund should harmonize with the kinds of assets to be financed (such as long-term funds for the acquisition of fixed assets),
2. *Volume and regularity of cash inflow.* If the inflow of cash is substantial and reliable, it becomes more feasible to adopt financial leverage (financing through borrowing). Bus transportation and moviehouses are businesses with substantial daily cash inflows.
3. *Control.* The type of fund to be used should reflect the importance given by the residual owners to the control of company operations. Bringing in new stockholders would result in dilution of equity and sharing of voting power. Most long-term loans impose positive and negative covenants.
4. *Flexibility.* The source and nature of the funds should be adjustable in response to change in the need for funds. A revolving credit line with a bank allows avilment of funds as and when needed, and early repayment without reduction of the credit line.
5. *The economy.* The level and trend of business activity, money supply, capital markets, and taxation.
6. *The industry.* The characteristics of seasonal variations, competition, regulation, and growth prospects. Public utilities are subject to rate approval by regulatory bodies.
7. *The enterprise.* The organization's legal form, financial standing, industrial rank, and management policies and outlook.

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8. *Social responsibility.* The company's contribution to social progress and community development.

Since finance management is concerned with the use of money over time, the projections of funds requirements distinguish short-term, medium-term, and long-term needs. Generally, short-term is understood to mean less than one year, medium-term as from one year to less than five years, and long-term beyond five years. There are different sources of funds for the different lengths of time the funds are needed. Three general rules prevail in the acquisition of funds:

1. The maturity of the obligation should be well within the earning life of the asset or project being financed.
2. Foreseeable regular capital requirements should be derived from long-term investors or stable sources which ordinarily can be depended upon for loan renewals or extensions, while short-term borrowing from commercial banks or the money market.
3. The use of the funds should generate income which is greater than the cost of the funds.

For short-term financing, resort may be made to trade credit ("accounts payable" liability for the buyer), promissory notes (one name or several names as co-makers, either secured or unsecured), assignment of receivables, and commercial drafts (the recipient of the forthcoming payment instructs the obligated party to pay on sight or within a specified time the amount specified, and the obligated party accepts the draft by writing his name across the face of the instrument). Security or collateral for promissory notes may be in the form of marketable securities (bonds and shares of stock), bills of lading, warehouse receipts, trust receipts, surety bonds, or mortgages on real estate or chattel (movable property). The development of the money market has made available to first-class borrowers substantial amounts of short-term funds at competitive interest rates.

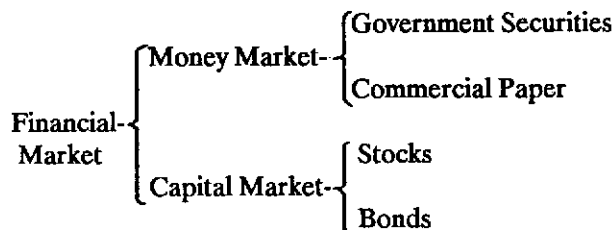
For longer term financing, the internal sources would be the present owners or stockholders being asked to increase their equity investment, while the external sources would be investment houses which sell or underwrite shares or long-term debt securities. An increase in corporate capital may require the offer of pre-emptive rights (prior privilege) to existing stockholders who may subscribe to the proportionate number of the new shares at the specified subscription price. Other potential buyers of securities may be approached through direct placement (with institutional investors or trustees of funds), contractual underwriting arrangements with investment houses (for a premium, the

securities underwriter guarantees the sale of a specified number of the securities being underwritten within a certain period), and competitive bidding by all interested purchasers (as is done in the case of Treasury Bills and other government securities).

The Financial Market

The *money market* is the exchange mechanism by which money and short-term instruments of solvent credits are traded as commodity. It is the market in which money and "near-money" instruments are bought and sold. Aside from government securities which are a class by themselves, the instruments traded are issues of leading or prime financial institutions or well-established business concerns selected by a market process of credit and investment rating.

The money market is different from the *capital market* since the latter refers to the market for long-term debt (bonds) and equity instruments (stocks), which are the components of the capital structure of a corporation. An important and well-known component of the capital market is the stock market. The money market and the capital market together compose the *financial market*.



Generally, the money market has these five characteristics or operating principles:

1. Investors are financially well situated ("big ticket").
2. Borrowers are of prime credit-worthiness.
3. Employment of money market funds is for short-term purposes.
4. The spread earned by the intermediary is small in percentage points (about 1% to 2% in an active market).
5. Loans are usually on a clean basis (no collateral).

Money market deals involve big sums of money and are quickly transacted by telephone. They do not rely on small savings because money market placements are not deposits and are therefore not insured by the Philippine Deposit Insurance Corporation. Money market yields are usually higher than those on certificates of time deposits but the risk is higher because the money market borrower

is one specific entity on a particular money market instrument, whereas bank deposits are commingled and loaned out to numerous borrowers (i.e., a depositor's money is not specifically identified as having been loaned out to a specific borrower).

The money market is intended to be a low overhead operation; hence, the spread earned by the financial intermediary is small in percentage points. Documentation is reduced to a minimum. Borrowers should be highly credit-worthy so that collateral may be dispensed with (thus saving on cost and time). Money market funds should be used for short-term, working capital purposes because such funds are only temporarily available and therefore volatile. The use of money market funds for long-term, fixed capital purposes is a mismatch of maturities which invites the risk of default (through the borrower's illiquidity, should its money market lenders ask for payment and loanable funds are not available from elsewhere).

The finance management function requires a close watch of the money market and the capital market. The finance manager should be familiar with the various papers and financing methods used, who the principal lenders and securities buyers are, the best contacts in the securities markets, and the guidelines for maintaining a good capital structure. Financing through borrowing requires the exercise of great care and the observance of these guidelines:

1. Issue long-term bonds only if the estimated earnings give a factor of safety of at least 100% (ratio of earnings, net of interest payments, to the amount of the interest).
2. Keep the capital structure (equity capital plus long-term borrowings) simple.
3. Aim at flexibility in the contract between our security buyers and our corporation.
4. Protect the corporation against loss or dilution of control (unless the incoming investor is a clear asset in the management of the corporation).
5. Keep the cost of debt service to the minimum (debt service is payment of current interest and current amortization or reduction of principal).
6. Reserve the best of our assets acceptable as collateral for emergency financing.
7. Limit the use of borrowed funds to the specific use for which they were borrowed.
8. Follow closely the amortization schedule for the loan and have payments ready before due date.
9. Funds which are temporarily idle should be made productive through placements in the money market, even for a few weeks.

Working Capital

Working capital is the excess of current assets over current liabilities. It is the amount of funds necessary to provide for the regular flow and orderly marketing of goods and services from producers to consumers and for the day-to-day conduct of the business.

Current assets refer to cash and other assets readily convertible into cash, in a short period of time, through the normal operations of the business. Current liabilities are those payables which have to be paid within a short period of time, usually one year or one fiscal period. Since current assets are defined in terms of cash availability, it is the expectation that current assets will generate the cash for payment of current liabilities. Hence, here we are primarily concerned with the sufficiency of current assets and the holding down of our current liabilities to a level well within the payment capability of our current assets. Also, current assets become cash in the normal operations of the business; therefore, the finance manager keeps close watch on the operations so that raw materials become finished products, which become accounts receivable through aggressive sales, and which become cash through effective collection. In turn, the cash so generated is used to pay the accounts payable incurred for the procurement of raw materials to use or goods to sell, the short-term loans payable incurred for cash purchases, and the supplies, power, salaries and wages, taxes, and other day-to-day expenses.

It now becomes clear that we must work for the conversion of near-cash assets into cash and not allow such assets to remain dormant. This means that we should make determined efforts to sell our inventories and to collect our receivables; otherwise, we will not have the cash to pay our current liabilities as these become due for payment. Also, conversion of current assets into cash is the final step for realized profit becoming dividend available for distribution to stockholders.

Selling on credit terms is easy; it merely is a transfer of our assets from inventories to Accounts Receivable. Collection is what is difficult, for this is the conversion of Accounts Receivable into Cash. And Cash is really what working capital management is all about. Without collection, Accounts Receivable will remain receivable forever.

Thus the marketing manager urges his salesmen with the battlecry, "There is no profit without sales!" But he is closely followed by the finance manager who thunders, "There is no sale unless collected!"

Credit and Collection

Credit is the power to obtain economic goods and services now in exchange for the promise to pay the agreed

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equivalent at some future time, with or without a consideration called interest. This power, or borrowing capacity, is possessed by the borrower and recognized by the lender. It has its limit (because no one has unlimited borrowing capacity). This capacity is reduced each time we borrow, and is restored by the amount of payment each time we repay the principal of an obligation. Borrowing capacity is therefore determined by capacity to repay. We should not borrow beyond our capacity to repay, because this will lead to default and eventually our financial downfall. Conversely, we should not lend nor sell on credit beyond the applicant's capacity to repay. How to determine capacity to repay is another story which, in turn, has another factor to consider--willingness to pay! Much of success in credit approval is largely due to subjective judgment as to character, or willingness to pay.

One of the more readily available sources of credit (if we exclude the loan sharks) is trade creditors. Our suppliers are anxious to sell, more so because they are in competition with other suppliers; hence, they come offering us credit terms. Formalities are less than in applying for a bank loan or for credit facilities through a financial intermediary, trade credit can often be "stretched" without penalty, and apparently trade credit is interest-free. But trade credit, of course, has its hidden cost, because our suppliers have set their prices high enough to cover their own costs of working capital. We might think of "exploiting" our trade creditors to the limit for our own benefit, until we realize that we are in the same boat when we in turn try to sell our inventories through installment sales (and our installment buyers try to do to us what we tried to do to our own trade creditors). This becomes an expensive vicious cycle for both the unwary trade creditors and trade borrowers.

The cost of credit in the Philippines is very high because of:

1. Limited supply of credit facilities.
2. Insufficient credit consciousness among borrowers, and
3. The high cost of default.

This can easily be grasped when we learn that among the biggest delinquent accounts receivable for electricity, water, and telephone service are government agencies with obligations amounting to millions of pesos overdue for months and years. According to a newspaper report, the telephone company had to disconnect its service to the Bureau of Customs because of delinquent accounts. If the foremost revenue arm of the government is delinquent, how would the other agencies be? But the Customs people will answer indignantly that they have their own long list of accounts receivable, millions of pesos in customs duties and charges uncollected for years. We

have the Civil Aeronautics Administration with millions in receivables from Philippine Airlines, which in turn is very shy about paying because it also has millions in receivables from the Bureau of Posts for the carriage of air mail. In addition, the newspapers say that PAL has failed to collect millions long overdue from the frequent jet-hopping of a former Madame, Governor, and Minister (one person, not three). So the suppliers and contractors of the Civil Aeronautics Administration are heavily delayed in collecting, and the bad debt losses of Philippine Airlines (once the country's biggest losing corporation) in turn hurt heavily the Government Service Insurance System (which owns PAL) and reduced the benefits accruing to the thousands of government employees insured by the GSIS.

The average Filipino is not careful with his personal credit-worthiness. How many sari-sari stores and *carinderias* have closed down because of *i-lista* uncollectibles (long lists of small sums written in chalk on the *dingding*)? How many of those insured have "temporarily" borrowed on their life assurance policies with the intention of repaying but never did? How many relatives have borrowed small sums of money from us without repaying? How many low and unsteady-income Filipinos have readily purchased TV sets and appliances on installment plans when their house rental payments are heavily in arrears? In fact, there are many believers in the saying, "It is cheaper to move than to pay rent."

Not only are the poor Filipinos in default; the rich Filipinos are even more deeply so. In fact, that is how some cronies became fabulously rich--at the expense of their creditor-victims, principally the PNB and DBP. Modus operandi was for crony applicants borrowing huge amounts from government financial institutions in the name of crony corporations for projects which were bound to default--then abandon the grossly over-priced non-performing assets to the lending bank. Thus, crony loans were deliberate raids on the banks' vaults by crony corporations for the personal benefit of cronies and the powerful political figures for whom they fronted. And the experience has been that it is much harder to collect from rich debtors than from poor debtors.

This brings our discussion to the presence of loan sharks everywhere, the usurers who prey on the poor who are in need of small sums. Notorious for their "five-six" operations, these loan sharks practically assume no risk because their original capital has already been recovered several times over through their excessive interest charges. They have become an accepted appendage to the Filipino way of life, and their poor victims are their best defenders (for without usurers there would be no easy access to "informal credit" for the unbankable poor). Loan sharks--some of whom are Indians riding motorcycles--easily grow richer because their debtor-victims keep growing in number, keep borrowing

additional sums, and endlessly keep paying interest (far beyond the amounts originally borrowed).

Trade Financing

Instead of trying to "stretch" our trade credit, we should on the contrary do our best to be model trade debtors. This is good business sense, because taking trade discounts is often such a substantial advantage for our own firm. If trade credit terms are 2/10, net 30, we are in effect paying a penalty of 2% for a credit period of 20 days.

On a supplier's invoice for P100,000, we would remit only P98,000 if paid within ten days. If we neglect to take the cash discount, we are paying P2,000 for the use of P98,000 for 20 days, or effectively at the rate of 2.04% for 20 days, which is equivalent to a high 36.73% per annum. The formula is:

$$\begin{aligned} \text{Annual internal rate} &= \frac{\text{discount}}{100\% - \text{discount}} \times \frac{360 \text{ days}}{\text{payment period} - \text{discount period}} \\ &= \frac{2\%}{98\%} \times \frac{360}{20} \\ &= 36.73\% \end{aligned}$$

Trade financing arises only from our firm not being required to pay cash for our purchases from a particular supplier. As such, it is flexible and convenient, but it has its limitations as to amount and usefulness. Trade credit provides specific goods only, it does not supply cash for the payment of other obligations. Abuse of trade credit by "stretching" the period of payment will cause a downgrade in our credit rating and eventually the loss of such trade credit by the imposition on us of Cash on Delivery terms or, worse still, Cash Before Delivery.

Costs of Financing

Other sources of funds for working capital would be the commercial banks for short-term loans or revolving credit lines, finance companies for factoring and discounting of receivables, and leasing companies. All these involve interest costs, financing charges, or rental expense. These costs are usually recurrent, contractual obligations, hence, they are charged to operations before provision for income tax and prior to determination of net income. As contractual fixed charges to revenue, they come well ahead in the determination of taxable income. The incurring of debts involves the risk of reducing the residual earnings for the owners of the enterprise.

However, debt-financing has advantages in that the costs are fixed and known in advance. Therefore, price calculations and expense budgets can be prepared more reliably. Also, such costs of debt-financing are chargeable to operations; hence, they provide a tax shield. In effect, if the operations are profitable, the government is absorbing 35% of such debt-financing costs (but if the firm is losing, the corporation bears the full cost of debt-financing). This can be followed from an analysis of the effect on Earnings per Share (EPS) as caused by changes in Earnings Before Interest and Taxes (EBIT). (Refer to the Appendix.)

Cash Budgets

The flow of cash and the need for funds can be forecast and visualized through the preparation of a cash budget. If the cash flows are fairly stable and can be reasonably anticipated, the cash budget can be by months; otherwise, it may have to be done on a weekly basis or even on a day-to-day basis.

(In Million P)	Jan	Feb	Mar
Cash Inflows:			
Cash Sales	P10	P12	P13
Collections	15 P25	16 P28	18 P31
Minus Cash Outflows:			
Cash Purchases	6	11	10
Payments on Account	10	14	15
Expenses	5 21	6 31	5 30
Net Cash Inflows (Outflow)			
for the Month	4	(3)	1
Add beginning Cash Balance	1	2	1.5
End of Month Cash Balance	5	(1)	2.5
Minus Target Cash Level, or beginning			
Cash Balance for Succeeding			
Month	2	1.5	2
Cash Surplus (Shortage)	P 3	(P 2.5)	P 0.5

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Information required on a periodic basis would be Sales or Revenue, Collections, Purchases, and Payments. These would largely be recurrent, but we should also take up non-recurrent cash inflows and outflows as far as these can be anticipated. Then we proceed to prepare the budget in this sequence shown in table 1.

The foregoing Cash Budget (in a very condensed form) shows anticipated Cash Surplus of P3M at end-January and of P0.5M at end-March, while there is an anticipated Cash Shortage of P2.5M at end-February. Knowing this, the finance manager can plan for the possible employment of the surplus and the procurement

of funds to cover the shortage. An adjusted Cash Budget may subsequently be prepared to include anticipated earnings from the employment of the cash surplus and the cost of borrowing to cover the shortage.

The effective manager anticipates future developments and plans ahead, so that he can avail himself of foreseeable opportunities and be ready for problems expected to arise. Careful preparation of the cash budget leads to effective cash management, thus providing for the liquidity, solvency, and profitability of our enterprise.

EARNINGS BEFORE INTEREST AND TAXES AND EARNINGS PER SHARE ANALYSIS

Model A: All equity, profitable operation.

Capital: P1,000,000 consisting of 100,000 shares @P10 par.

Sales		P10,000,000
Cost of Goods Sold		<u>6,000,000</u>
Gross Profit on Sales		4,000,000
Selling Expenses	P700,000	
Administrative Expenses	<u>800,000</u>	<u>1,500,000</u>
Net Operating Income, or EBIT		2,500,000
Interest Expense		
Earnings before taxes, or EBT		2,500,000
Provision for Income Tax, @ 35%		<u>875,000</u>
Net Income		<u><u>P1,625,000</u></u>

$$\text{EPS} = \frac{\text{P1,625,000 Net Income}}{100,000 \text{ share}} = \text{P16.25}$$

Model B: Same as Model A, but operating at a loss.

Sales		P 7,000,000
Cost of Goods Sold		<u>6,000,000</u>
Gross Profit on Sales		1,000,000
Selling Expenses	P700,000	
Administrative Expenses	<u>800,000</u>	<u>1,500,000</u>
Net Operating Income (Loss), or EBIT (LBIT)		(500,000)
Interest Expense		
Earnings (Loss) before Taxes, or EBT (LBT)		(500,000)
Provision for Income Tax, @ 35%		
Net Income (Loss)		<u><u>(P 500,000)</u></u>

Model C: Equity, 50%; Long-term debt, 50%; profitable operation. Stock P500,000; consisting of 50,000 shares, P10 par
 Long-term Debt P500,000 @ 20% p.a.

Sales		P10,000,000
Cost of Goods Sold		<u>6,000,000</u>
Gross Profit on Sales		4,000,000
Selling Expenses	P700,000	
Administrative Expenses	<u>800,000</u>	<u>1,500,000</u>
Net Operating Income, or EBIT		2,500,000
Interest Expense		<u>100,000</u>
Earnings before Taxes		2,400,000
Provision for Income Tax, @ 35%		<u>840,000</u>
Net Income		<u><u>P 1,560,000</u></u>

$$\text{EPS} = \frac{\text{P1,560,000 Net Income}}{50,000 \text{ shares}} = \text{P31.20}$$

Model D: Same as Model C, but operating at a loss.

Sales		P 7,000,000
Cost of Goods Sold		<u>6,000,000</u>
Gross Profit on Sales		1,000,000
Selling Expenses	P700,000	
Administrative Expenses	<u>800,000</u>	<u>1,500,000</u>
Net Operating Income (Loss), or EBIT (LBIT)		(500,000)
Interest Expense		<u>(100,000)</u>
Earnings (Loss) before taxes, or EBT (LBT)		(600,000)
Provision for Income Tax, @ 35%		
Net Income (Loss)		<u><u>(P 600,000)</u></u>

$$\text{EPS (LPS)} = \frac{(\text{P600,000}) \text{ Net Loss}}{50,000 \text{ shares}} = (\text{P12.-}) \text{ Loss per share}$$

Note: With long-term debt in the Capital Structure, EPS for Model C rose to P31.20 compared with EPS of P16.25 for all-equity Model A. However, Loss per Share for Model D rose to P12.- compared with Loss per Share of P5.- per Model B.

Thus, the use of long-term debt magnifies profit per share, and likewise magnifies losses per share, as compared with an all-equity structure.

LEVERAGE is the inclusion of *fixed costs* among a firm's expenditures (fixed costs are costs incurred even with zero sales or zero production). Leverage may be *operating leverage* or *financial leverage*. A combination of the two provides a measure of total or *combined leverage*.

Operating leverage depends on operating fixed costs (administrative costs, depreciation, property taxes, and other fixed costs, but *excluding interest on long term debt* since interest expense is a financial fixed cost).

$$\text{Degree of Operating Leverage} = \frac{\text{Percentage change in EBIT}}{\text{Percentage change in units sold}} \text{ (DOL)}$$

$$\text{DOL} = \frac{x(p-v)}{x(p-v) - F_0}$$

where, x = output level at which DOL is computed

p = unit sales price

v = unit variable cost

F₀ = operating fixed costs (excluding interest on firm's debt)

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Given an output of 50,000 units, unit sales price of P10, unit variable cost of P7, and operating fixed cost of P90,000:

$$\text{DOL} = \frac{50,000 (P_{10} - P_7)}{50,000 (P_{10} - P_7) - P_{90,000}} = \underline{2.5}$$

With DOL = 2.5, a 1% change in sales will produce a 2.5% change in EBIT. Suppose a 20% increase in units sales (i.e., from 50,000 to 60,000). This will produce a 50% increase in EBIT (i.e., 20% x 2.5 DOL). Proof:

$$\text{Previous EBIT} = 50,000 (P_{10} - P_7) - P_{90,000} = \underline{P_{60,000}}$$

$$\text{Net EBIT} = 60,000 (P_{10} - P_7) - P_{90,000} = \underline{P_{90,000}}$$

A high DOL will lead to exceptionally large EBIT if unit sales increase, and to exceptionally large losses if unit sales decrease. Other things held constant, a higher DOL indicates higher business risk.

Financial leverage arises when the firm borrows funds. A firm with no debt obligations has no financial leverage.

$$\text{Degree of Financial Leverage (DFL)} = \frac{\text{Percentage change in EPS}}{\text{Percentage change in EBIT}}$$

$$\text{DFL} = \frac{\text{EBIT}}{\text{EBIT} - F_f} \quad \text{where, } F_f = \text{interest on debt (fixed financial cost).}$$

Given: EBIT = P60,000. Compare Case A (no debt), with Case B (with a borrowing of P100,000 @ 10% p.a.).

$$\text{Case A DFL} = \frac{P_{60,000}}{P_{60,000} - 0} = \underline{1.0}$$

$$\text{Case B DFL} = \frac{P_{60,000}}{P_{60,000} - (P_{100,000})(10\%)} = \underline{1.2}$$

Without a debt, with DFL = 1, a 1% change in EBIT produces a 1% change in EPS. Upon borrowing P100,000 @ 10% p.a., with DFL = 1.2, 1% change in EBIT produces a 1.2% change in EPS. Borrowing is advantageous when the invested funds earn at a higher rate than the interest paid on the loan.

Combined leverage is the measure of total leverage due to *both* operating and financial fixed costs.

$$\text{Degree of Combined Leverage} = \frac{\text{Percentage change in EPS}}{(\text{DCL}) \text{ Percentage change in unit sales}}$$

$$\text{DCL} = \text{DOL} \times \text{DFL}$$

$$\text{DCL} = \frac{x(p-v)}{x(p-v) - (F_0 + F_f)}$$

$$\text{DCL} = \frac{50,000 (P_{10} - P_7)}{50,000 (P_{10} - P_7) - (P_{90,000} + P_{10,000})} = \frac{150,000}{50,000} = \underline{3}$$

$$\text{Model: DCL} = 2.5 \times 1.2 = \underline{3}$$

With DCL = 3, a 1% change in unit sales produces a 3% change in EPS. Degree of combined leverage is a measure of overall riskiness arising from both operating and financial leverage.