SOURCES AND USES OF SHORT-TERM AND LONG-TERM FUNDS PT. 1

Financing - It means to provide funding for a particular need.

Settlement Risk - risk that the bank may not be able to give back their deposit. Philippine banks are normally insured by the Philippine Deposit Insurance Corporation (PDIC). Depositors may recover up to PHP500,000 per depositor from PDIC in case of bank default/bankruptcy.

Debt Financing - borrowing money from lenders and not giving up ownership.

Equity Financing - the method of raising capital by selling company stock to investors (stockholders) in exchange of ownership interests in the company.

	DEBT FINANCING		EQUITY FINANCING	
	Advantages	**Disadvantages**	**Advantages**	**Disadvantages**
Cost	It is limited to interest payments.		It does not require a fixed dividend payment.	It has the highest cost (see discussion on risk).
Control	Lender has no control over operations and investment decisions.	It may limit cash dividend declaration by management.		
Maturity		There is a specified maturity date or periodic amortization payments.	There is no maturity date. It is perpetual.	
Risk		There is a risk of not meeting the obligation (default risk)		Among the sources of financing, it is the riskiest.
Tax	Interest expense is tax deductible (it can minimize tax expense).		203	Dividends are not tax deductible.

This is in the point of view of the Company.

Note: that if debt is cheaper, why doesn't the company avail of 100% debt financing? Possible answer: No bank/creditor will provide 100% debt financing. Creditors evaluate the paying capacity of borrowers which means the amount of loans they will tend depends on the ability of the company to serve the debt. Normally, this is based on the projected cash flows of the borrower.

Note: that it is risky because:

- Stockholders are not guaranteed of returns unlike creditors which have guaranteed interest and principal payment.
- Under the corporation code, creditors have to be paid first in case of liquidation before anything is paid to the stockholders
- If the company is losing, it's the stockholders who bear the loss.

Consider the following situations:

1. Fabrics Inc. put up a clothing outlet worth PHP10 million and funded the entire amount using a one-year short-term loan. The company's average annual operating cash flows for the last three years is PHP 1.5 million.

Ask the learners what they think would happen to the company.

Sample Response:

- Given the average annual operating cash flows of the company of only PHP1.5 million, there is a very high probability that Fabrics Inc. will not be able to pay the loan within one year.
- Given the amount of the loan in relation to operating cash flows, management may be become very stressed thinking about how to settle this loan. This will adversely affect the executive time they spend in managing the core business of the Company.

2. Dragon Inc. is in the business of fireworks production. Their peak season is usually during the holidays, especially during Christmas and New Year. The company needs additional PHP500, 000 to finance their working capital needs during the holiday season.

Ask the learners how this should be financed. Should it be financed using short-term loan, long-term loan, or through equity?

Sample Response:

- This should be financed by short-term loan. Long-term loan and equity financing are not recommended for this temporary financing requirement because of the following reasons:
- The need for financing is limited to the holiday season.
- Equity financing is the most expensive, as previously discussed, while interest rates on long-term debt is also generally higher as compared to interest rates on short-term debt. Also, if the funds are needed only for a limited period, there is no need for the company to secure a long-term source of funds.

Ask the students if they can think of other scenarios where a mismatch for financing could be a problem for a business.

Sample response: Financing a long-term investment through a short-term loan. Let us say you are a restaurant owner and you are planning to open another branch which will cost you PHP8 million. The returns on this investment will be realised over a number of years. Therefore, financing it through a short-term loan, say one year, will give you too much pressure to pay the loan because the new branch may not have generated enough cash flow within the year to cover the PHP8 million.

1. *Differentiate long-term and short-term financing.*

Short term financing is debt scheduled to be paid within a year while long-term financing is debt to be paid in more than a year.

2. *Recap on liquidity risks and liquidity ratios.*

Liquidity risk typically refers to the inability of an investor to buy or sell an asset to avoid financial loss. It can also refer to the inability to meet obligations since assets are tied up with investments or inventory.

- Ratios such as the current ratio and quick ratio measure the institution's liquidity. There should be a balance between liquid funds and investments. Too high liquidity ratios will have opportunity costs since these funds could have been invested to yield earnings. Too low liquidity ratios, however, may cause the institution to default on payments should emergency situations arise. Enough liquid assets should be available to meet short term obligations.

3. *Enumerate and describe the sources and uses of short-term funds. Provide actual examples under each type of source, if applicable.*

- **Suppliers Credit** – refers to the extension of payment due date by suppliers.

  Discuss the effects of stretching payables and show the computation for interest effects of not taking discounts.

  For example, the terms 2/10 (2% discount if paid within 10 days) with the due date of 60 days will result in annual interest of (2/98)*(360/50 days), or 14.69%. Therefore, by not availing of the discount, the one who ordered the supplies from the supplier in effect borrowed at 14.69%. It may also be viewed as the opportunity cost forgone.

- **Advances from stockholders or other owners** – personal funds advanced by a stockholder to a company that usually requires interest. These usually require little to no interest on advances, especially if the owner is advancing funds to assist the company in sudden liquidity crisis. This source, however, is depended on the availability of funds of an individual.
- **Credit cooperatives** – provided lending services to its members. Members usually pay contributions to the cooperative.
- **Banks** – provides several loan products catering to different types of needs.
- **Credit Cards** – just take note of the high interest rates on this source of funds.
- **Lending Companies** – companies that are dedicated to lending. They usually charge higher interest than banks but their credit requirements are more lenient compared to banks.
- **Pawnshops** – provides funds in exchange for collateral, usually jewellery, or other items of value.
- **Informal lending sources (5/6)**

  Describe the actual interest paid for this type of lending

  – Interest is usually paid per month, and monthly interest is (6-5)/5 or 20%. Annual interest is actually 20%*12 or 240%.

4. *Discuss the factors considered in selecting the source of short-term financing.*

- **Cost (Interest)**
  - Informal lending sources like 5/6 may be the most expensive.

- **Availability of short-term funds**
  - Informal lending sources like 5/6 is most available because there are no formal requirements to avail of the facility.
- **Risk**
  - Whatever the source of fund is, if the company defaults, the lenders may foreclose some of the company's properties or even the entire business itself to settle the loan.
- **Flexibility**
  - This pertains to the ability of the company to access funds.
  - or example, a bank loan may be cheaper but the bank may reject the loan application of the borrower because he/she did not pass the credit evaluation process of the bank.
  - This financial flexibility can be influenced by:
    - Nature of the Company's business
    - Leverage ratio
    - Stability of operating cash flows
- **Restrictions (Debt covenants)**
  - Some lenders like banks may require a minimum deposit balance with their branch for as long as the loans remain outstanding.
  - The bank's approval may also be secured before cash dividends can be declared.

5. *Enumerate and describe the sources and uses of long-term funds.*

• **Equity investors** – these are the individuals/corporations which are issued common stock. They share in the ownership of the company. There are also equity investors who do not have voting rights in the company but have a share in dividends, usually a fixed percentage. These investors are issued preferred stock. Holders of preferred shares are first to receive dividends than common stock holders.
• **Internally generated funds** – not all profits are distributed to stockholders. Most of the profits are re-invested and used by companies to finance their needs.
• **Banks** – they provide long-term loans, depending on the nature of the need. For example, a 5-year to 10-year loan may be granted if the purpose of the loan is construction of an office building.
• **Bonds** – these are debt investments where an investor loans money to an entity which borrows the funds.
• **Lending companies** – they can also provide long-term loans.

6. *The company's capital structure is a major consideration for deciding which long-term sources of funds to utilize. The target would be to balance debt and equity and come up with the minimum cost of capital.*

Need/Activity	Answer Key
Acquisition of equipment	Long-term
Franchise of a fast-food outlet	Long-term
Purchase of inventory for a clothing shop	Short-term
Loan for agricultural needs (i.e. palay production, mango, etc.)	Short-term
Loan for purchase of a commercial space	Long-term
Development of a subdivision	Long-term
Auto-loan	Long-term
Loan for sari-sari store supplies	Short-term
Housing Loan	Long-term
Emergency loans (advances)	Short-term

1. *'Why is it important to distinguish between long-term or short term financing?'*

• It is important so that the sources or funds are matched with the needs of the company/business. Matching of sources and uses of funds saves the business from encountering defaults on obligations and incurring losses, and at the same time, use the funds at hand to earn profits.

2. What are the advantages and disadvantages of equity financing? Give at least 3. Explain.

3. Identify the different sources of short-term funds and long-term funds. Give at least 3 and define.

4. Discuss when to use short-term funds in business.

5. Discuss when to use long-term funds in business.

*__Revolving Line of Credit__ - It allows the borrowers to renew their loans with a certain limit whenever they need it.

SOURCES AND USES OF SHORT-TERM AND LONG-TERM FUNDS PT. 2

Importance of Know-Your-Customer (KYC) initiatives.

- Banks are required to verify the identity of their customers to ensure that the funds will not be used for illegal activities such as, but not limited to, money laundering and terrorist financing.

5C's of Credit - the institution's primary consideration in approving loan applications.

- **Character** –the willingness of the borrower to repay the loan
- **Capacity** – a customer's ability to generate cash flows
- **Collateral** – security pledged for payment of the loan
- **Capital** – a customer's financial resources
- **Condition** – current economic or business conditions

Discuss the following example/case:

Mr. Joe Salazar applied for a PHP1.5 million loan in behalf of his business, "Joe's Restaurant", for additional capital in 2015. He is the Chairman of the Board of Joe's Restaurant. In their meeting, the Board decided to open an additional branch for the restaurant. Joe's Restaurant currently has 3 branches in Metro Manila and would like to open up a small branch in Quezon City. Joe's Restaurant has been in the business for 12 fruitful years and has been a previous borrower of the bank. The company had previous late payments before but the reasons are usually justifiable, and the balance of the loan, along with any penalties, if any, is paid. The three branches earn a net income of PHP900, 000/year. The lot where the main restaurant is located is pledged as collateral to the bank. This property is valued at PHP2 million. Shown below is an excerpt from Joe's Restaurant's 2014 consolidated audited financial statements.

	As of 31 December 2014	As of 31 December 2013
Current Assets	1,200,000	900,000
Long-term Assets	4,400,000	4,200,000
Short-term Liability	500,000	460,000
Long-term Liability	2,300,000	3,500,000
Equity	2,800,000	1,140,000
Net Income	900,000	950,000
Cash Flow from Operations	500,000	450,000

Identify the information to be used in analysing the 5C's of Credit. (AVERAGE TO DIFFICULT)

- **Character**: Check Joe's Restaurant's payment history and experience in the business. The fruitfulness of the business proves Mr. Salazar and the BOD's ability to manage the business well.
- **Capacity**: The positive income from the business and positive cash flows from operations proves the borrower's capacity. Current assets also show that the borrower has funds easily available for repayment if necessary. The term of the loan, should be adjusted to the cash flow of the borrower.
- **Collateral**: The property pledged serves as collateral. Its value is usually greater than the loan to provide the bank security for sudden changes in value of the collateral, as well as to compensate the bank for the collateral's illiquid nature.
- **Capital**: The audit financial statements give a preview of the borrower's resources.
- **Condition**: The income statement shows that the business is earning and is even growing. The business has already grown to 3 branches. This shows a preview of the growth in the food industry. Learners may also research on other business growth trends to know about macroeconomic conditions.

OBLIGATIONS OF ENTREPRENEURS TO CREDITORS

- Pay the creditors based on the payment schedule agreed upon. If you cannot pay on time, notify the creditors ahead of time. But as much as possible, pay on time.

- Provide the collaterals as agreed upon in the loan negotiation with proper documentation, if necessary and if applicable (e.g. annotation of the TCT or CCT). Ensure that these collaterals are in the physical condition perceived by the creditors in determining the loanable value of the loans.

- Comply with the provisions of loan covenant such as maintaining certain liquidity and leverage ratios. These conditions are supposed to benefit the borrower so that his company will not be over-exposed to borrowing or he will monitor the liquidity position on a more regular basis.

- Notify the creditor if the company is acquiring another company or the company is now the subject of acquisition. The interest of creditors may be jeopardized if new owners take over the company or if the company is going to acquire another company.

- Do not default on the loans as much as possible. Aside from the creditors, there may be other parties such as the guarantors of the loan who will be put at a disadvantage if the borrower defaults.

General steps on Loan Application

- Loan applicant inquires with the loan officer to apply for a loan.
- The loan officer provides the loan applicant a loan application form and interviews the client.
- The loan officer then decides what type of loan product the borrower qualifies in, and then provides them a list of requirements.
- The applicant then submits the requirements along with the loan application form.
- If collateral is required, the corresponding mortgage documents are made ready.
- The loan officer then forwards the documents to the credit evaluation department.
- The credit evaluation department checks whether the applicant provided the complete documents.
- Credit investigation is done, and the credit worthiness of the loan applicant is evaluated.
- The credit analyst prepares a recommendation and will present the recommendation before a loan committee who approves the loan application. The loan committee is generally composed of top executives from the bank.
- If the loan is approved, then the post-approval requirements will be sent to the loan applicant for compliance.

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1. *Enumerate the 5C's of credit (EASY)*
2. *What do you think is the most important consideration of banks in approving a loan? (AVERAGE TO DIFFICULT)*

'Character and Capacity are the most important factors a bank considers in approving a loan. They go hand-in-hand because without willingness to repay, the available funds to pay the loan will not in itself guarantee payment.'

3. *Why is it important for banks to collect all the loan requirements? Which requirements are meant to be used to evaluate each of the 5C's of credit? (AVERAGE TO DIFFICULT)*

Sample Responses:

Documents are required to provide support on the analysis of the borrower's existence and creditworthiness.

Character – Interview, Fully filled out loan application form, NBI clearance, Police Clearance, etc.

Capacity – Income documents (Certificate of employment, Audited financial statements, Income tax return, etc.)

Collateral – Copy of TCT, Tax declaration, Building plan, etc.

Capital – Statement of Assets and Liabilities, Audited financial statements, etc.

Condition – Latest news articles relating to the company (if listed), Trends in the financial statements, Business Background/Company Profile, etc.

BASIC LONG-TERM FINANCIAL CONCEPTS

Interest - the cost of holding money. It is the amount charged by the lenders to the borrowers/ users of money, and is usually paid at regular intervals.

Simple Interest – the charging interest rate r based on a principal P over T number of years.

Interest = P x r x T

	SERVANT 1	SERVANT 2	SERVANT 3
Principal	500,000.00	500,000.00	500,000.00
Interest	234,664.04	200,000.00	0.00
Total Returned	734,664.04	700,000.00	500,000.00

Principal = PHP 500, 000
Rate = 8%
Time = 5 years

Thus,

Interest = 500,000 x .08 x 5 = PHP 200, 000

Compound Interest - the interest in the first compounding period is added on the principal, which will then be the basis for the interest to be computed for the next period. So in our earlier example, the interest to be earned on the first year is equal to 500,000 x .08 = 40,000. The 40,000 interest will be added to the 500,000 principal which will then be the basis for interest computation for the second year; 540,000 x .08 = 43,200, and so on. The formula below shows the summary of the effects of adding on the interest, where m is the compounding frequency.

$$\text{Interest} = \left(P \times \left(1 + \frac{r}{m}\right)^{(T \times m)} \right) - P$$

In the example above,

Principal = PHP500, 000

Rate = 8%

Time = 5 years

Compounding frequency = annually

Thus,

Interest = 500,000 x (1 + (0.08/1)) (5x1) – 500,000 = PHP234, 664.04

Compounding Frequency - the number of times interest is computed on a certain principal in one year.

- If the investment pays annually, the interest is the same as computed above since m=1.
- If the investment pays semi-annually, the total interest will be equal to:

$$\text{Interest} = 500{,}000 \times (1+(0.08/2))^{(5\times2)} - 500{,}000 = \text{PHP}240{,}122.14$$

Compute the interest earned over the 5 year term with PHP500,000 as principal using the following compounding periods. (EASY)

- Quarterly: PHP242, 973.70
- Monthly: PHP244, 922.85
- Semi-monthly: PHP245, 416.34
- Daily (365 days): PHP245, 879.66

The **effective annual rate** allows comparison of loan costs or investment returns over different compounding periods between both businesses and investors because it is the actual interest actually paid or earned. It should be distinguished from the nominal rate, or the stated contractual rate which is the interest charged by a lender or promised by a borrower. It does not reflect the effect of compounding frequency.

The formula for computing the EAR is as follows:

$$EAR = \left(1 + \frac{r}{m}\right)^{m} - 1$$

This is very similar to the formula for computing for interest earned using compounded interest. The only difference is that EAR only takes into consideration the actual interest for one year.

Mr. Lopez wishes to find the effective annual rate for his loan in BOD bank with a 5% nominal annual rate when interest is compounded (1) annually, (2) semi-annually, and (3) quarterly.

- For annual compounding: 5%
- For semiannual compounding: 5.06%
- For quarterly compounding: 5.09%

Compute for the EAR for the following: (AVERAGE)

- For monthly compounding: 5.12%
- For daily compounding: 5.13%

The effective annual rate increases with increasing compounding frequency, up to a limit that occurs with **continuous compounding**, which is almost equivalent to daily compounding.

The Truth-in-Lending act for Banks and other financial institutions requires that they disclose the effective interest rates for loan products to borrowers. The effective rates should reflect the service charges and other deductions from the loan proceeds.

Future Value - the amount to which an investment will grow after earning interest. In our previous examples, it is the principal plus total interest earned over a stated period. So the future value of an investment of PHP500, 000.00 yielding an interest of 8% for a 5-year period compounded annually is PHP734, 664.04.

Present Value - the amount you have to invest today if you want to have a certain amount of cash flow in the future.

These definitions can better be illustrated in a timeline.

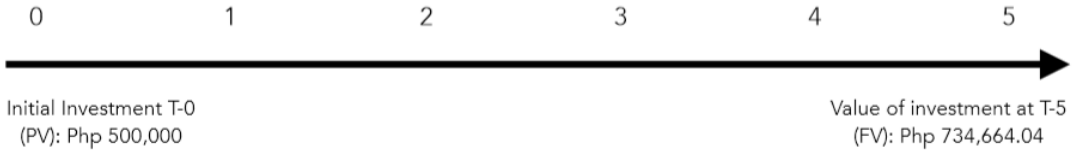


Figure 1: Growth of Value over 5-year period

- The time value of money analysis helps managers and investors compare cash flows today versus cash flow in the future. It answers questions such as what amount in the future is equal to PHP500, 000.00 today or what amount today is equivalent to PHP734, 664.04 in the future. The future value is computed using compounding while the present value is computed using discounting. In practice, when making investment decisions, investors usually adopt the present value approach.

Basic Patterns of Cash Flow

Single Amount (Lump Sum) - a single cash outflow is made and the total receipts will be at a single future date.

Annuity - periodic stream of equal cash flow at equal time intervals (annually, monthly, etc.). For example, payment for a certain item shall be for 12 equal monthly instalments of PHP1, 000.

Mixed Stream - unequal periodic cash flows that reflect no particular pattern. For example, payments made by a customer are in 3 unequal instalments.

TIME	AMOUNT
Year 1	1,500
Year 2	3,000
Year 3	2,500

Table 1: Sample of Mixed Stream

Compute for what amount they will receive (what is the future value) if PHP150, 000 is invested at 6% per annum compounded semi-annually for 3 years.

$$\text{Answer: } 150{,}000 \times \left(1+\frac{0.06}{2}\right)^{(3\times2)} = \text{PHP179,107.8}$$

Reminder: Future value is simply the principal multiplied by the FV factor.

Present Value - answers the question: How much must be invested today to produce a certain amount in the future. Since future value is calculated by multiplying the present investment by 1 + interest rate compounded by the number of periods, we shall just reverse the process. This method is called discounting

$$FV = PV \times (1 + r)^T$$

$$PV = \frac{FV}{(1 + r)^T}$$

Illustration: You need P25, 000.00 to buy a laptop when you enter into college 2 years from now. How much must you invest now if the interest rate is at 6% per annum?

$$PV = 25{,}000/(\ 1.06\text{^}2) = \text{PHP22,249.91}$$

You need to invest PHP22, 249.91 to have PHP25, 000.00 by the end of 2 years

Illustrate how to calculate future value and present value of mixed streams of cash flows.

Future Value: Suppose that you choose to put your savings annually in MRI bank at 8% per annum. For today, you put PHP1, 200, on the second year PHP1, 400, and PHP1,000 for the third year. How much will you have available at the end of three years?

Factor multiplied by the Amount Deposited		Future Value
$(1.08)^3 = 1.2597$	PHP1,200	1,511.65
$(1.08)^2 = 1.1664$	PHP1,400	1,632.96
$(1.08)^1 = 1.08$	PHP1,000	1,080.00
Total FV		**P4,224.61**

Table 2: Sample Computation to Identify Future Value

- The FV factor can either be computed or looked up in the FV table.
- This timeline illustrates the timing of cash flows:

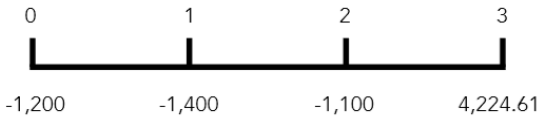


Figure 2: Timing of Cash Flows

(Present Value) Suppose that you can buy a phone for PHP8, 000 down payment with 4,000 for each of the next two years or pay PHP15, 500 cash today. Given an interest rate of 8%, which is a cheaper alternative?

	Present Value
PHP8,000	8,000.00
PHP4,000/(1.081)	3,703.70
PHP4,000/(1.082)	3,429.36
Total PV	**PHP15,133.06**

Table 3: Sample Computation for Present Value

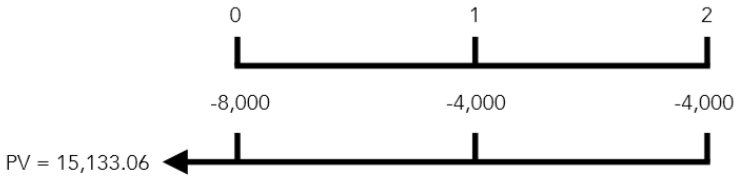


Figure 3: Sample Timeline for Computation of Present Value

It shows that the installment plan is cheaper. The present value of a stream of future cash flows is the amount you have to invest today to generate the stream.

An **annuity** is a stream of equal periodic cash flows over a specified period. First, you have to distinguish between ordinary annuity and annuity due. Ordinary annuity payments are made at the end of each period (usually annually), while for annuity due, the cash flow occurs at the beginning of each period. We shall first illustrate ordinary annuities.

(Future Value of an Ordinary Annuity)
The formula for computing the future value of an ordinary annuity is as follows:

$$\text{Cash flow x } \{[(1+r)^t - 1)]/r\} \quad \textit{Cash flow} \times \frac{[(1+r)^t - 1]}{r}$$

or

Cash flow multiplied by the FV factor seen on the table.

To use the table provided, look for the rate of interest at the uppermost row and the number of periods on the left most column. The intersection will be the factor to be multiplied to the cash flow.

Illustration: Mr. Mendoza wishes to determine how much the value of his savings in 5 years will be if he will put PHP 1,000 per year in a bank which provides 7% interest per annum.

FV = 1,000 x (FVA factor: 5.7507 period=5, rate=7%) = PHP5, 750.70

(Present of an Ordinary Annuity)
The formula for computing the present value of an ordinary annuity is as follows:

$$\text{Cash flow} \times \frac{1 - \frac{1}{(1+r)^t}}{r}$$

or

Cash flow multiplied by the PV factor seen on the table

Illustration: Mr. Yusoph wants to buy a pair of shoes worth PHP10,500. He has the option of paying it today for PHP10,500 or buying them in instalment where he has to pay a down payment of PHP4,000 today, and the balance will be paid in two equal payments of PHP4,000 each for the next two years. Given an interest rate of 10%, which is the better option?

PV = 4,000 + 4000 x (PVA factor: 1.7355 period=2, rate=10%) = PHP10,932.00 for buying on instalment vs. PV PHP10,500 for buying today.

The 4,000 down payment is not multiplied by the annuity factor because it is paid today.
Since buying on instalment would be more expensive, Mr. Yusoph should buy the pair of shoes today.

(EASY)

1. You deposited PHP1,500 in a bank with an interest rate of 5% for 1 year. What is the future value of your deposit?

   Answer Key
   FV = 1,500 x (1+0.05) = 1,575

2. You need to save up for P1,500 in 1 year. How much should you save now if the bank offers a rate of 5%? (Find the present value)

   Answer Key
   PV = 1,500/(1+0.05) = 1,428.57

(AVERAGE TO DIFFICULT)

1. FNB pays 6% interest compounded semi-annually. SNB pays 6% compounded monthly. Which bank offers the higher effective annual rate?

   Answer Key
   FNB = $(1+(0.06/2))^2 - 1 = 6.090\%$
   SNB = $(1+(0.06/12))^{12} = 6.168\%$

   Therefore, SNB offers the higher effective annual rate. For equal rates, the more compounding the better.

2. Compute the present value and future value of PHP100 cash flow for the following combination of discount rates and times:
   a. r = 8%, t = 5 years

b. r = 8%, t = 10years

c. r = 5%, t = 5years

d. r = 5%, t = 10 years

Answer Key

r	t	PV	FV
0.08	5	68.05832	146.9328
0.08	10	46.31935	215.8925
0.05	5	78.35262	127.6282
0.05	10	61.39133	162.8895

3. You deposit PHP1,000 in your bank account. If the bank pays 4% simple interest, how much interest will you accumulate in your account after 10 years? What if the bank pays compound interest?

Answer Key

Simple Interest = 1000 x .04 x 10 = 400

Compound Interest = $1000 \times (1.04^{10}) - 1000 = 480.24$

4. Mario will be making a lump sum payment of PHP1.6 million on the condominium he is buying two years from now. If he wants to set aside funds from now and invest it that will earn interest of 3%, net of taxes every year and this amount is compounded annually, how much does he need to invest today? What if the interest is compounded semi-annually, how much does he need to invest today?

Answer Key

- $PHP1,600,000/(1.03)^2 = 1,508,153.45$
- $PHP1,600,000/(1.015)^4 = 1,507,494.77$

5. What is the present value of the following cash flow stream if the interest is 6%?

Year	Cash Flow
1	300
2	400
3	500

Answer Key

$PV = 300/1.06 + 400/(1.06^2) + 500/(1.06^3) = 1,059.827$

6. What is the present value of a 3-year annuity of PHP100 if the discount rate is 6%?

Answer Key

PVA = 100 x PVA factor(2.673) = 267.3

7. What is the present value of a 5-year annuity payment of PHP1,000 with a discount rate of 5% if the first payment will be made today?

Answer Key

PVA = (1000 x PVA factor(4.329))/1.05 = 4,122.87

BASIC LONG-TERM FINANCIAL CONCEPTS PT. 4

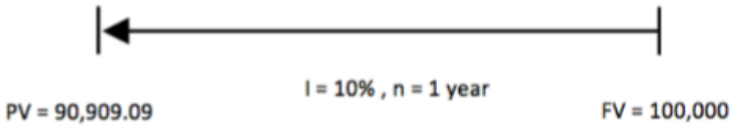
A **loan** is money lent at an interest rate for a certain period of time. Loans are normally secured from different financial institutions, the most common of which, are banks.

A **bond** is also a form of loan, but can be traded through Philippine Dealing and Exchange (PDEX) System.

Relationship of time value of money in loan/bond pricing.

Present Value

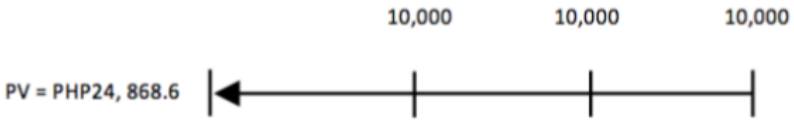
To get the present value of a bond maturing a year from now, let us illustrate what we have learned in the previous module regarding present value. The discussion follows the viewpoint of the lender. Pricing for the loan/bond, will, nevertheless, be the same. Let's say that you are willing to invest a sum of money that will yield PHP100, 000 at the end of year 1, what amount should you invest today? If the investment earns 10%, then the amount to be invested or the present value should be equal to PHP100, 000 x (1/(1.101)) = PHP90,909.09



If this amount will be received in 2 years, then the present value is equal to P100,000 x (1/(1.10)2) = P82,644.63. We may also use the present value table.

Present Value of interest payments (annuities)

In addition to receiving the face value at maturity, the investor/lender also receives periodic interest payments over the life of the bond. These periodic payments, as mentioned in the previous module, are called annuities. To illustrate, assume that you will receive P10,000 annually for 3 years and the interest rate is 10%.



From the table (or by using the formula provided in the earlier module), we get that the present value of annuity factor for 3 periods using 10% interest is 2.4869. Multiplying this factor by PHP10,000 provides a present value of interest payments of PHP24,868.6.

Present Value of a bond

• To calculate the present value or the price of a bond, we need to combine both the present values of the face value and the annuity payments. In our previous example, suppose that a bond with face value of PHP100,000 pays interest of 10% annually and matures in 3 years. What is the price of the bond?

• First, we find the present value of the face value of the bond. That is equal to PHP100,000 x (1/(1.10)3) = PHP75,131.40.

• Next we compute for the present value of annuity payments of P10,000 annual interest (100,000 x .1). This was computed earlier in our example, PHP24,868.6.

Therefore, the price of the bond is:

PHP100,000 Face Value at 10% for 3 years	75,131.40
PHP10,000 interest for 3 years	24,868.60
Price of the Bond	**100,000.00**

Take note that interest payments may be made semi-annually, or even monthly. In this case, we need to adjust the interest rates and time periods accordingly.

Differentiate discount from premium bond pricing.

Bonds issued at a discount

• When bonds are issued below the face or par value, they are said to be issued at a discount. A discount occurs when the required rate of return is greater than the nominal rate of return. For example, let's say we have a PHP100,000 bond with a stated rate of 10% and effective rate (required rate of return) of 12%, that pays interest semi-annually and has a maturity of 3 years. At what price should the bond be issued?

• First, we need to compute for the amount of interest payment per semi-annual period which is equal to 100,000 x 10% x 6/12 = 5,000. The total period is 6 (3 years x 2) and the discount rate to be used is 6% (12%/2).

• The price of the bond is as follows:

P100,000 Face Value at 6% for 6 periods	70,496.05
P5,000 interest for 6 periods	24,568.62
Price of the Bond	**95,082.67**

Bonds issued at a premium

When bonds are issued above par, they are said to be issued at a premium. It occurs when the required rate (effective rate) is below the stated or nominal rate. Let us recall our previous example but use 8% effective rate instead of 12%. It will result in the following bond price:

PHP100,000 Face Value at 4% for 6 periods	79,031.45
PHP5,000 interest for 6 periods	26,210.68
Price of the Bond	**105,242.13**

Illustrate and define effective interest amortization.

• The effective interest method distinguishes two types of interest rate, the nominal rate or the stated rate and effective rate or the market rate. When the bond is sold at a discount, the effective rate is higher than the nominal rate. On the other hand, when the bond is sold at a premium, the effective rate is lower than the nominal rate. Using this method, the amortization of bond discount or premium results in periodic interest expense equal to a constant percentage of the carrying amount of the bonds.

BASIC LONG-TERM FINANCIAL CONCEPTS PT. 5

Capital Budgeting - It is the process of evaluating and selecting long-term investments that are consistent with the firm's goal of maximizing owners' wealth

Differentiate long-term investment from operating expenses.

• Long-term investment results in benefits to accrue to the company in excess of one year while operating expenses benefits the company only within the operating period.

Enumerate examples of capital expenditure.

• Expand or enter into a new line of business

• Replace or renew fixed assets

• Construct new premises

• Opening a new branch

• Acquisition of machineries and equipment

Discuss the steps in Capital Budgeting.

1. **Investment Proposal.** Proposals for capital expenditure come from different levels within a business organization. These are submitted to the finance team for thorough analysis.

2. **Review and Analysis**. Financial personnel perform formal review and analysis to assess the benefits and cost of the investment proposals. These personnel make use of several financial tools which they see fit in evaluating the project.

3. **Decision Making**. Companies usually delegate capital expenditure decisions on the basis of value limits. The analysis is presented to the proper approving body who will in turn make the decision on whether to push through with the project or not.

4. **Implementation**. Release of funds and start of the project occurs after approval. Large expenditures are usually released in phases.

5. **Monitoring**. Results are monitored and actual cost and benefits are compared with those that were expected. Action may be required if deviations from the plan are significant in amount.

Explain the risk and return trade-off.

• In making investment decisions, financial managers take note of the risk and returns of the projects they are entering.

• Recall the story of Jack and the Beanstalk. In the story, Jack trades his cow for three magic beans. This is a very risky move for Jack since these beans may be fake and therefore, worthless. Luckily those magic beans grew into beanstalk that gave Jack the opportunity to gather riches beyond his wildest dreams, while fighting with a giant along the way. Jack gambled in this transaction. Should Jack decide not to sell the cow for magic beans and instead sold it at the current market value, the story would be different. As we can see, the higher the risk, the higher the returns, but of course, if turned sour, the higher the losses as well.

• This situation is also true for making financial decisions. Taking a higher risk gives you the opportunity to earn higher returns. Low risk investments like treasury notes, also called risk-free instruments, earn a low and steady income flow. In making investment decisions, financial managers ensure that the proposed business will earn more than the risk-free rate since they need to compensate for the risk the investment will entail. This introduces us to the **Required Rate of Return**. It is the minimum expected yield investors require in order to select a particular investment.

Ask learners on how the risk and return trade-off can be applied in real life.

Investment scams (i.e. pyramiding) showing that high short term profit is usually accompanied by high risks. Whereas long term, hard-earned income is less susceptible to loss.

• Sample Answers

• Fixed income vs. commission based income

• Earning interest from time deposits vs. earning from stocks

• Entering in a business with steady income vs. entering into seasonal high profit business

• Investing in preferred vs. common stock

Enumerate and discuss the basic terminologies related to capital budgeting.

• Independent vs. Mutually Exclusive Investments

• Independent Projects are those whose cash flows are independent of one another. The acceptance of one project does not eliminate the others from further consideration. Mutually exclusive projects, on the other hand, are projects which serve the same function and therefore compete with one another. The acceptance of one eliminates all other proposals that serve a similar function from further consideration.

• Unlimited Funds vs. Capital Rationing

• The amount and availability of funds affects the company's decisions in capital outlays. If the company has unlimited funds, then all projects which pass the risk-return criteria will be accepted and implemented. Otherwise, firms will operate under capital rationing and will accept only projects which provide the best opportunity to increase shareholder wealth.

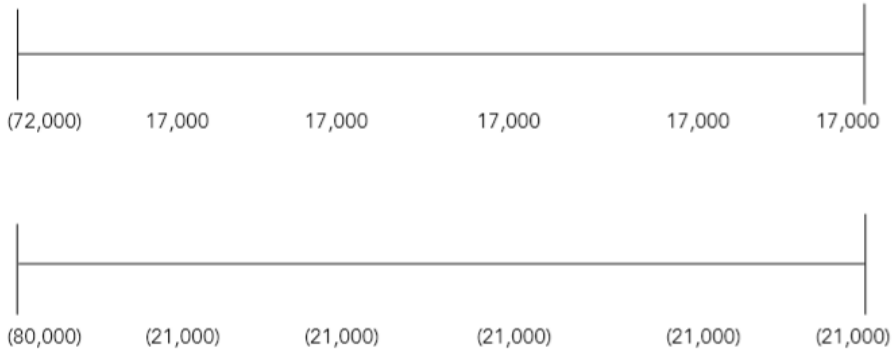
• Accept-Reject vs. Ranking Approaches

• The Accept-Reject approach is usually done for mutually exclusive projects where one project is favoured over the others. The approach accepts projects which pass a certain criteria. Ranking is done when there are several projects passing the criteria and the company is only able to fund so much. The highest ranking projects will be selected for implementation.

Introduce and explain the different techniques in capital budgeting

• Before proceeding with discussion of techniques, let us first introduce the concept of relevant cash flows. Relevant cash flows include the initial investment, cash inflows from income from the project, and the expected terminal value of the project, if any. These are the cash flows considered in analysing whether an investment adds value to the firm. Cash flows should be net of tax. However, to simplify our discussion, we shall not include tax in our consideration.

• For example, Mr. Alfonse is deciding on which of the 2 mutually exclusive projects he should accept. Project A requires an initial outlay of PHP72,000 and is expected to receive PHP17,000 annually for the next 5 years. Project B, on the other hand, requires an investment of PHP80,000 but will earn PHP21,000 annually for the next 5 years. In this example, we can see that the relevant cash flows are the upfront investment and the annual income from investment.



Payback Method

• This is the simplest method used in capital budgeting. It measures the amount of time, usually in years, to recover the initial investment. To illustrate this method, let us use our previous examples for relevant cash flows.

• For Project A, the initial cash flow is PHP72,000. In 4 years, Mr. Alfonse would have generated a total cash flow of PHP68,000. To get the actual time period, let us divide the remaining amount (4,000)* and divide it by the cash flow for year 5. We get .24, so the total payback period for Project A is 4 + .24 = 4.24 years. Conversely, if the cash flows are equal,

you may derive the answer by dividing the initial cash flow by the annuity, 72,000/17,000 = 4.24 years. Using this method for Project B, we get the payback period of 80,000/21,000 = 3.81 years.

Let us also illustrate an example of computing the payback period for uneven cash flows.

Initial Investment = 15,000

Year 1 = 7,000
Year 2 = 4,000
Year 3 = 6,000
Year 4 = 3,000

For years 1 and 2, we have already recovered 11,000 of our investment. We need 4,000 more to reach 15,000 thus for the third year, we have 4,000/6,000 = 0.67. The payback period is 2.67 years. Notice that the cash flow for year 4 is already ignored.

• Managers usually set an acceptable payback period for projects. For making accept-reject decisions, projects which meet the set acceptable payback period shall be accepted and those which not are discarded. It is a popular method used especially for small projects due to its simplicity and consideration for the timing of cash flows. The criticism of this method, however, it that it does not consider the time value of money. Also, it fails to consider the cash flows after the payback period. For instance, in our previous example, we can see that Project B is better compared to Project A due to the quick recovery of the investment. If Project A has a cash flow of, let's say PHP50,000 at year 5, we can easily deduce that Project A is more profitable. However, the payback method only recognizes the gains during the payback period.

Net Present Value (NPV)

• This method is more sophisticated than the payback method since it considers the time value of money and it considers all the cash flows during the life of the project including the terminal value. The NPV can be computed by comparing the present value of cash inflows against the present value of cash outflows. Cash flows are discounted using the firm's cost of capital (cost of acquiring funding needs) to get the present values.

NPV = Present value of cash inflows – present value of cash outflows

• If the NPV of a project is zero or positive, it should be accepted. In finance, if these projected cash flows are realized, the NPV of the project should be equivalent to the increase in total shareholder's value.

• Assuming that the cost of capital is 8%, let us compute the NPV for our previous example.

Project A = 17,000 x PVAF(3.993) – 72,000 = 67,881 – 72,000 = (4,119)

Ask the learners to compute for the NPV of Project B.

Project B = 21,000 x PVAF(3.993) – 80,000 = 83,853 – 80,000 = 3,853

We can see that Project A's NPV is negative and Project B's NPV is positive, thus, we only accept project B.

• Internal Rate of Return (IRR) • The IRR is one of the most widely used techniques in capital budgeting. It is defined as the discount rate that equates the NPV of an investment to zero. If this method is used for capital budgeting analysis, the project's IRR is compared to the company's cost of capital. If the IRR is greater than the cost of capital, the project should be accepted otherwise, it should be rejected. Manual computation of the IRR involves trial and error, however, this IRR computation is a lot easier using computation applications like MS Excel.

• For example, you are planning to build a branch for your business at PHP350,000 and expect to receive PHP400,000 in 1 year. First, compute for the rate of return (profit/investment).

Rate of return = 50,000/350,000 = 14.3%

• We compute for the rate of return because the NPV of a project with cost of capital equal to the rate of return is equal to zero. To illustrate:

NPV = 400,000/(1+0.143) – 350,000 = 0

• The IRR can easily be computed using MS Excel using the IRR function.

• The NPV and IRR are interrelated techniques. An IRR greater than the cost of capital equates to a positive NPV and vice versa. On a purely theoretical view, NPV is the better measure since it measures the actual cash value a project creates for shareholders. However, IRR is also a widely used tool since financial managers usually like to think in terms of ratios and percentages.

You are the investment manager of an appliance company. The industry is currently in the expansion face and the CEO would like to capture as much of the market share as possible. You asked your analysts to submit project proposals as summarized below.

Project	Discount Rate	Investment	Annual Cash Flow	Project Life (Years)
A	10	3M	1M	5
B	12	4M	1M	8
C	8	5M	2M	4
D	8	3M	1.5M	3
E	12	3M	1M	6

Which projects should the manager choose? If you were given unlimited capital, which projects should be implemented?

Answer key:

Project	Discount Rate	Investment	Annual Cash Flow	Project Life (Years)	NPV	Rank
A	10%	3,000,000	1,000,000	5	790,786.77	5
B	12%	4,000,000	1,000,000	8	967,639.77	3
C	8%	5,000,000	2,000,000	4	1,624,253.68	1
D	8%	3,000,000	1,500,000	3	865,645.48	4
E	12%	3,000,000	1,000,000	6	1,111,407.32	2

If there is no budget constraint, all projects can push through since the NPV of all projects is positive. However, if there are budget constraints, projects will be chosen based on the highest NPVs in which case Projects C & E should be considered if you're asked to choose two.

INTRODUCTION TO INVESTMENT PT.1

Settlement Risk – risk that the bank may not be able to give back their deposit. Philippine banks are normally insured by the Philippine Deposit Insurance Corporation (PDIC). Depositors may recover up to PHP500,000 per depositor from PDIC in case of bank default/bankruptcy.

Different types of investments will be grouped into three:

(1) fixed income and equities,

(2) alternatives to fixed income and equities,

(3) other investment assets

2. Fixed Income and Equities

Investment Type	Advantages	Disadvantages
Stocks (Equity) "Type of security that signifies ownership in a corporation and represents a claim on part of the corporation's assets and earnings"	• Unlimited Upside	• No guaranteed returns. • Riskiest of all assets (can lose even more than 50% of their money in one day)

Bank Deposits (Fixed Income) "Money placed into a banking institution for safekeeping"	• Known income based on outstanding principal and current interest rate • Shorter, if any, holding period vs. bonds	• Lower interest income vs. bonds • Settlement risk if the bank closes
Bonds (Fixed ilcome) "Debt investments where an investor loans money to an entity which borrows the funds for a defined period of time at a variable or commonly, fixed interest rate"	• Known periodic payments for a certain period of time • Can't lose money if bond investment is held until maturity	• If not held until maturity and pre-terminated, investor can gain or lose depending on the prevailing interest rates at the time of pre-termination. If interest rates are higher, investor in bonds can lose in the pre-termination

Table 3: Advantages and Disadvantages of Fixed Income and Equities

• **Management Fee** – the amount clients pay to the professionals who manage their mutual funds, normally a certain percentage of portfolio value.

• **Dividends** – distribution of the company's income to its shareholders.

• **Voting Rights** – right to be heard on certain policies that the company wants to implement.

3. Alternatives to fixed income and equities (25 minutes)

Investment Type	Advantages	Disadvantages
Mutual funds "An investment that is made up of a pool of funds collected from many investors for the purpose of investing in stocks, bonds, and similar assets"	"Give small investors access to professionally managed, diversified portfolios of equities, bonds and other securities, which would be quite difficult (if not impossible) to create with a small amount of capital"	• Pay management fees • Values can also fluctuate just like the stock market
Unit investment trust fund (UITF) Similar to a mutual fund but is managed by banks.	• Same as mutual funds. • Easier access because clients can open an account in any branch of the bank near them. • No entry and management fees.	No shareholder rights for investors such as dividends and voting rights.

Table 4: Advantages and Disadvantages of Alternative Investments

Liquidity – ability to be converted into cash, the higher the liquidity the better.

Margin Trading – allows clients to trade more than their capital. It can magnify both earnings and losses.

Inflation – general increase in prices.

Hedge – investment that reduces the risk of adverse price movements in an asset.

Diversification – process of investing in different kinds of assets to lessen exposure in market/price volatility.

Geopolitical risks – "risks of one country's foreign policy influencing or upsetting domestic, political, and social policy in another country or region"

Correlation – how price of an asset moves with respect to another asset (i.e. positive correlation if both assets move in the same direction, negative correlation if both assets move in the opposite direction)

Escalation Clause – agreement to raise prices in the future depending on certain circumstances (i.e. increase in inflation leading to higher rental rates).

Insurance Premium – the amount paid on a regular basis to the insurance company in return for the insurance/protection provided.

VUL – Variable Universal Life insurance or a life insurance that offers both death benefit and investment features.

4. Other investment assets

Investment Type	Advantages	Disadvantages
Currencies "Generally accepted form of money, including coins and paper notes, which is issued by a government and circulated within an economy" (i.e. USD, EUR, JPY)	• Largest market in the world in terms of trading volume, so much liquidity • Unlike stocks, commodities, etc., currency asset itself is a medium of exchange which people can use to transact	• Volatile and trades 24-hours a day (must be closely monitored) • Generally uses margin trading which allows clients to bet more than their capital (may also be an advantage)
Commodities "A basic good used in commerce that is interchangeable with other commodities of the same type" (i.e. gold, nickel, oil)	• Natural hedge against inflation • Negatively correlated with equities and bonds (may be used for diversification) • Hedge against geopolitical risks	• Same as currencies • Impractical to invest directly considering storage, transportation and insurance costs involved
Real Estate "Land and any improvements on it" (i.e. land, house and lot, condominiums)	• Generally appreciates over time because land gets scarce • Have relatively low correlations with other asset classes (may be used for diversification) • Can be a source of recurring rental income • May also be a hedge against inflation	• Huge capital needed, financing can be difficult • Maintenance of the property needed to preserve its value • Illiquid or difficult to sell
Insurance "A contract (policy) in which an individual or entity receives financial protection or reimbursement against losses from an insurance company" (i.e. life insurance, educational plans, VUL)	• Gives the insured individual/entity the cash/capital to deal with unforeseen adverse financial consequences • May provide certain tax benefits (i.e. tax deductibility, tax-free provisions)	• Insurance premiums may be costly • On some of traditional insurance plans, no sickness/death until a certain age may mean not getting any benefits at all (that's why VUL's are now very prevalent) • Some insurance companies can go bankrupt (i.e. College Assurance Plan) if companies fail to factor significantly adverse unforeseen circumstances

Sample Matching Type Quiz

	(A) Investment Asset	(B) Description
___1	Stocks (Equity)	A. An investment that is made up of a pool of funds collected from many investors for the purpose of investing in stocks, bonds, and similar assets.
___2	Bank Deposits (Fixed Income)	B. Land and any improvements on it.
___3	Mutual Funds	C. Type of security that signifies ownership in a corporation and represents a claim on part of the corporation's assets and earnings.

___4	Real Estate	D. A contract (policy) in which an individual or entity receives financial protection or reimbursement against losses from an insurance company.
___5	Insurance	E. Money placed into a banking institution for safekeeping

Sample Matching Type Quiz

	(A) Investment Asset	(B) Advantage/Disadvantage
___1	Stocks (Equity)	A. Disadvantage: On some of traditional plans, no sickness/death until a certain age may mean not getting any benefits at all
___2	Bank Deposits (Fixed Income)	B. Advantage: Shorter, if any, holding period vs. bonds
___3	Mutual Funds	C. Advantage: Can be a source of recurring rental income
___4	Real Estate	D. Disadvantage: Riskiest of all assets (can lose as much as 50% of their money in one day)
___5	Insurance	E. Disadvantage: Pay management fees

Answer Key If Matching Type

Part 1: C, E, A, B, D

Part 2: D, B, E, C, A

Sample Essay Questions

1. Why would a risk-taker (likes to take risks) type of investor prefer equities over fixed income?

2. Why would a risk-averse (likes to avoid risks) type of investor prefer fixed income over equities?

3. How do mutual funds differ from UITFs?

4. If let's say you have PHP1,000,000 today which you can invest for the next 10 years, where will you put it and why?

Answer Key If Essay (Suggested Answers)

1. Equities are the riskiest of all assets because of their price volatility. In the Philippine Stocks Exchange, clients can lose as much as 50% on a stock in one day. Reasons why stock prices are volatile include uncertainties in company's earnings, negative or positive market sentiment of investors, etc. And with these great risks comes the potential for great upside for the risk-taker investor.

2. Fixed income assets are low-risk investments. Even if potential returns are low relative to equities, it gives the riskaverse investor known income/periodic payments. Note however that this is only true if the security is held until maturity. Default risk, which is the risk of the counterparty not fulfilling his obligation is also present in fixed income assets. Therefore, an investor must carefully analyze the issuer and must be convinced about its financial stability before buying its debt security.

3. Mutual funds are offered by non-bank institutions while UITFs are offered by banks. Given that UITFs are offered by banks, they are more accessible than mutual funds. Mutual funds on the other hand require management fees but provide the investors with shareholder rights such as dividends and voting rights. Since the underlying asset of mutual funds can also be equity, returns are not guaranteed and an investor can also lose.

4. Note to teacher: They can put it in one investment instrument or it can be a portfolio. Whatever the answer is, there has to be an explanation.

INTRODUCTION TO INVESTMENT

Risk - "Risk is the chance that an investment's actual return will be different than expected. Risk includes the possibility of losing some or all of the original investment."

Systematic and Non-Systematic Risk

Risk	Definition	Also Known As	Examples	Measurement
Systematic	Uncertainty inherent to the entire market	Market risk, undiversifiable risk	Changes in interest rates, recession, wars	Beta (β)
Non-systematic	Uncertainty that comes with the company or industry	Specific risk, diversifiable risk, residual risk	Rumors of a potential default, labor strikes, landslide in a mining company that disrupted the operations	Standard deviation (σ) less beta

Measuring Systematic and Non-Systematic Risk

Measurement	Risk it Measures	Definition	Formula
Beta (β)	Systematic risk	• Measure of the systematic risk of an investment or portfolio vs. the market as a whole. • Tendency of an investment's returns to respond to swings in the market.	$\beta_p = \frac{Cov(r_p, r_b)}{Var(r_b)}$
Standard deviation (σ)	Total risk	• Sum of systematic and non-systematic risk. • Total volatility of an investment.	$\sigma = \sqrt{\frac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n-1}}$

Note: Guide on β interpretation below:

• =1 – investment's price will have the same volatility as the PSEi

• >1 – investment's price will be more volatile than the PSEi

• <1 – investment's price will be less volatile than the PSEi

Example: A company with a β of 1.3 means that if the PSEi goes up by 10%, this company's stock price, on the average, will go up by 13%. The reverse is true which means that if the PSEi goes down by 10%, this company's stock price, on the average, will go down by 13%.

Based on the example, it is illustrated that a company with higher beta is more volatile and a company with lower beta is less volatile. Clarify to the learners that the β computed using the formula given on the table may not be reliable if data points used are for a short period of time only. Using data covering five to ten years is suggested because such period will often cover the booms and busts of an economic cycle.

Explain that the formula for beta is the covariance of the investment asset's returns with the returns of the market divided by the variance of the market. Beta can be easily computed through Microsoft Office Excel but due to the complexity of the formula in terms of manually computing beta, sources will be cited instead on where beta can be found.

• Emphasize that in getting an estimate of the non-systematic risk, the total risk will be computed first then from this, the systematic risk will be deducted.

• Clarify the components of the σ formula: - xi – return - $\bar{x}$ – average of returns - n – no. of data points

Diversification - is a risk management technique that combines a wide variety of investments within a portfolio to reduce risk. A well-diversified portfolio can eliminate non-systematic risk.

Two-Stock PHP 10,000 Portfolio (JFC and DMC)

Year	Portfolio Value	Return x_i	$\bar{X}$	$(x_i-\bar{X})^2$
30/1/2014	10,000.00			
28/2/2014	11,427.60	14.3%	2.9%	1.3%
31/3/2014	11,477.74	0.4%	2.9%	0.1%
30/4/2014	11,661.04	1.6%	2.9%	0.0%
30/5/2014	11,848.70	1.6%	2.9%	0.0%
30/6/2014	11,976.59	1.1%	2.9%	0.0%
31/7/2014	11,923.45	-0.4%	2.9%	0.1%
29/8/2014	12,609.95	5.8%	2.9%	0.1%
30/9/2014	13,048.32	3.5%	2.9%	0.0%
31/10/2014	13,219.55	1.3%	2.9%	0.0%
28/11/2014	13,623.45	3.1%	2.9%	0.0%
29/12/2014	13,635.51	0.1%	2.9%	0.1%
				1.7%
σ	4.2%			

Five-Stock PHP 10,000 Portfolio (JFC, GLO, URC, DMC, and PCOR)

Year	Portfolio Value	Return x_i	$\bar{X}$	$(x_i-\bar{X})^2$
30/1/2014	10,000.00			
28/2/2014	10,921.56	9.2%	2.9%	0.4%
31/3/2014	10,647.87	-2.5%	2.9%	0.3%
30/4/2014	10,859.22	2.0%	2.9%	0.0%
30/5/2014	10,981.69	1.1%	2.9%	0.0%
30/6/2014	11,122.52	1.3%	2.9%	0.0%
31/7/2014	11,337.00	1.9%	2.9%	0.0%
29/8/2014	11,593.20	2.3%	2.9%	0.0%
30/9/2014	12,009.73	3.6%	2.9%	0.0%
31/10/2014	12,139.22	1.1%	2.9%	0.0%
28/11/2014	12,428.98	2.4%	2.9%	0.0%
29/12/2014	12,356.12	-0.6%	2.9%	0.1%
				0.9%
σ	3.1%			

PSEi-invested PHP 10,000 Portfolio

Year	Value	Return x_i	$\bar{X}$	$(x_i-\bar{X})^2$
30/1/2014	10,000.00			
28/2/2014	10,635.31	6.4%	1.7%	0.2%
31/3/2014	10,641.46	0.1%	1.7%	0.0%
30/4/2014	11,103.62	4.3%	1.7%	0.1%
30/5/2014	11,003.88	-0.9%	1.7%	0.1%
30/6/2014	11,329.41	3.0%	1.7%	0.0%
31/7/2014	11,363.36	0.3%	1.7%	0.0%
29/8/2014	11,671.36	2.7%	1.7%	0.0%
30/9/2014	12,055.69	3.3%	1.7%	0.0%
31/10/2014	11,944.22	-0.9%	1.7%	0.1%
28/11/2014	12,074.41	1.1%	1.7%	0.0%
29/12/2014	11,968.78	-0.9%	1.7%	0.1%
				0.6%
	σ	2.4%		

Show that the standard deviation computed for a portfolio goes down as the component stocks increase in number. Notice that the PSEi has the least volatility because it is composed of 30 stocks.

MANAGING PERSONAL FINANCE

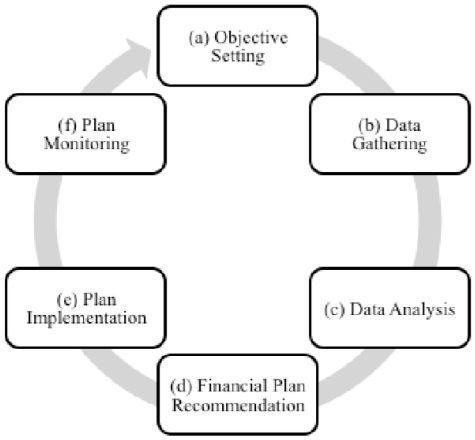
Personal Finance

• Personal finance includes all financial decisions and activities of an individual including budgeting, insurance, mortgage planning, savings, and retirement planning.

• It involves analyzing current financial positions, projecting short-term and long-term funding needs, and executing a plan to fulfil those needs considering individual financial constraints.

• It is primarily dependent on one's earnings, cost of living, and personal goals and wants.

Personal financial planning process



A. Objective Setting

• Quantify monetary objectives with definite time frames.
• Prioritize objectives.
• Examine these objectives with an individual's resources and limitations.
Example: A mom wants to have PHP1 million after 10 years for her daughter's education.

B. Data gathering

• Use surveys, questionnaires, and interviews to gather quantitative and qualitative information from the individual.
• Quantitative – for assessing financial status (i.e. investments, cash flow, liabilities, etc.)
• Qualitative – to identify individual's goals and objectives, lifestyle, risk-tolerance, etc.
Example: Interview the mom to know how much savings she has and her current sources of income.

C. Data Analysis

• Analyze the individual's financial position and cash flows.
• Review legal papers (i.e. insurance policies, trust agreements, wills, etc.).
• Evaluate objectives vis-à-vis the individual's resources and economic conditions.
Example: Map the mom's net cash flows and compute her required return to reach her target of PHP1 million after 10 years.

D. Financial Plan Recommendation

• Propose financial products.
• At this point, the individual can comment on the proposed solutions.
Example: Identify stocks, mutual funds or other assets which can generate the mom's required return.

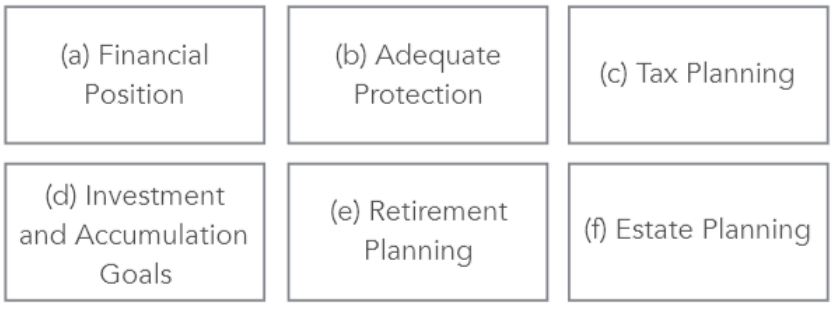
E. Plan Implementation

• Assist the individual in the execution of the recommended financial plan.
• Implementation may involve other entities so assist the individual in dealing with the parties involved in the execution of the financial plan.
Example: Help the mom open an account so she can invest in the recommended financial plan.

F. Plan Monitoring

• Review the financial plan periodically to evaluate changing market conditions (i.e. economic conditions, taxes, interest rates, etc.).
• Evaluate the financial plan regularly to see if it effectively meets the individual's goals and objectives.
Example: Check regularly whether the fund is growing as planned. Consider other alternative assets if performance is not good.

Six Key Areas of Personal Financial Planning



A. Financial Position

• Understanding of personal resources by checking an individual's net worth and cash flow.
• Net worth = assets less liabilities at a point in time

• Cash flow = expected sources of income less expected expenses within a period (i.e. year)
• Helps in determining the time frame to which personal goals can realistically be met.
• May need to answer the following questions:
• Do they have a clear understanding of their goals?
    • How do they track their income, expenses, and net worth?
    • What financial benefits do they get from their employer?

B. Adequate Protection
• Analysis of protection needed for unforeseen risks.
• Includes risks of liability, property, death, disability, health, and long-term care.
• Some insurance plans enjoy some tax benefits.
• May need to answer the following questions:
    • What things can they not afford to lose?
    • How will they take care of their dependents?
    • How have they planned for financial risks such as disability, illness, long-term care, and death?

C. Tax Planning
• Management of when and how much taxes will be paid.
• Understanding possible tax incentives, deductions, rebates, etc. can have a significant impact on managing personal finances given the magnitude of taxes paid by an individual.
• May need to answer the following questions:
    • How do they manage their taxes?
    • How do they plan the timing of income and deductions for tax purposes?
    • Are they comfortable with the tax environment applicable to them?

D. Investment and Accumulation Goals
• Planning on wealth accumulation for large purchases such as house, educational expenses, investments for retirement, etc.
• May need to answer the following questions:
    • What are their goals for wealth accumulation? (i.e. education, home, business, retirement comfort, etc.)
    • How are their current investments performing to meet their goals?
    • How much will they need? When will they need it?

E. Retirement Planning
• Understanding the cost of retirement.
• Analysis of cash flows to come up with investment plans that will meet the costs of retirement in the future.
• May need to answer the following questions:
    • How are they preparing for their retirement?
    • How are their liabilities affecting their retirement objectives?
    • Do they think they can maintain their standard of living during their retirement?

F. Estate Planning
• Planning for disposition of one's assets after death.
• Estate taxes paid to the government are huge, so avoiding these taxes can significantly impact one's personal finances.
• May need to answer the following questions:
    • How should their assets be distributed upon death?
    • How will their intentions be carried out? (i.e. will, trust, power of attorney, etc.)

Four simple habits for personal finance success
1. Save money – spend less than what they earn**.**
2. Avoid debt – manage their credit and debt wisely.
3. Invest – invest what they save.
4. Don't lose it – protect their downside by diversification or insurance

	(A) Personal Financial Planning Process Step	(B) Description
___1	Data Gathering	A. Periodic review of the financial plan to evaluate changing market conditions (i.e. economic conditions, taxes, interest rates, etc.).
___2	Financial Plan Recommendation	B. Quantifying monetary objectives with definite time frames. Prioritizing objectives.
___3	Plan Monitoring	C. Using surveys, questionnaires and interviews to gather quantitative and qualitative information from the individual.
___4	Objective Setting	D. Analysis of the individual's financial position and cash flows. Review of legal papers. Evaluation of objectives vis-à-vis the client's resources and economic conditions.
___5	Data Analysis	E. Financial products will be proposed. At this point, the individual can comment on the solutions proposed.

	(A) Key Area of Personal Financial Planning	(B) Description
___1	Financial Position	A. Planning on wealth accumulation for large purchases such as house, educational expenses, investments for retirement, etc.
___2	Tax Planning	B. Management of when and how much taxes will be paid.
___3	Retirement Planning	C. Analysis of protection needed for unforeseen risks.
___4	Adequate Protection	D. Understanding of personal resources by checking an individual's net worth and cash flow.
___5	Investment and Accumulation Goals	E. Understanding the cost of retirement. Analysis of cash flows to come up with investment plans that will meet the costs of retirement in the future.

Essay: (DIFFICULT) Assume you are 18 years old and you were able to save PHP50,000. Given what you've learned on portfolio diversification, how will you allocate your savings to bank time deposit and stocks (i.e. 100%-0%, 50%-50%, etc.)? Explain your answer.