

ECOLE SUPERIEURE DE COMMERCE

Kolea

**A Dissertation submitted in partial fulfilment of the requirements for Master's
degree in Financial Sciences and Accounting**

Major: CORPORATE FINANCE

TOPIC:

**THE FINANCING SOURCES AND THEIR
EFFECT ON THE PROFITABILITY OF
BISUNESS PROJECT**

***Case Study:* Acquisition of a production line for plastic pipes
reinforced with steel wire**

Submitted by:

BELHOUCHE HAYTHEM

Supervised by:

DR. SELOUGHA Fayrouz

September 2020

Dedication

*To My Dear Parents Who Have Always
Be there for me*

Acknowledgements

My first thanks are to “ALLAH” Glorified and Sublime Be He, who gave me the strength, courage and determination to carry out this work.

I would like to express my deepest gratitude to Dr Fayrouz SELOUGHHA, who supervised this work and whose remarks, advices and encouragements were crucial for the accomplishment of this work. I express to her all my gratitude and my most sincere thanks for the trust and privilege she granted me by accepting to be my supervisor.

Also, my gratitude goes to the honorable members of the jury who honored me for evaluating my work.

I cannot forget all those who have supported and encouraged me at critical times.

Finally, my thoughts go out to my family and friends to whom I have an infinite love. May they find in this work my deepest gratitude for their precious support.

List of Figures

Chapter I:

N° of Figure	Title	Page
I-1	Different types of equity shares	9
I-2	Hire purchase process	14
I-3	Source of fund based on time period	17
I-4	Source of fund based on source of generation	19

Chapter II:

N° of Figure	Title	Page
II-1	Compounding and Discounting	26
II-2	Steps Involved in Applying the Net Present Value Rule	28
II-3	Schematic representation of the decision tree	37

Chapter III:

N° of Figure	Title	Page
III-1	Financial structure of the project	45
III-2	Evolution of Turnover between 2014 and 2019	46
III-3	Distribution of provisional turnover by activity	47
III-4	Internal rate of return	54

List of Tables

N° of Table	Title	Page
III-1	Implementation planning	43
III-2	The Assumptions for the working capital requirement calculation	44
III-3	Calculation of Working capital requirement	44
III -4	Financial structure	45
III -5	Turnover between 2013 and 2018 (real)	46
III -6	Estimated turnover	46
III -7	Material consumption	47
III -8	Supplies consumption	48
III -9	Service consumption	48
III -10	Taxes	48
III -11	Personnel expenses	49
III -12	Depreciation table of the investment	49
III -13	Calculation of credit repayment	50
III -14	The income statement	51- 52
III -15	NPV (KDA)	53
III -16	Summary of the results of the financial evaluation	55

List of abbreviations

Abbreviation	Signification
ANDI	Agence Nationale de Developpement de L'Investissement
HP	Hire Purchase
IRR	Internal rate of Revenue
NPV	Net Present Value
PAT	Paid After Taxes
PBP	Payback Period
PI	Profitability Index
VAT	Value Added Taxes

Contents

GENERAL INTRODUCTION	A
CHAPTER I: Funding sources of investments.....	1
Section 1: Different Sources of Funding	2
Section 2: Classification of funding sources	16
CHAPTER II: Profitability Evaluation Criteria of a business project	21
Section 1: Financial evaluation tools in certain future	27
Section 2: Financial evaluation tools in uncertain future.....	32
CHAPTER III: Financial Evaluation of a business project	40
Section 1: Case study.....	42
GENERAL CONCLUSION	57

GENERAL INTRODUCTION

Funding may be done for a variety of reasons. Like capital asset acquirement, new machinery acquirement or the construction of a new building or depot.

The development of new products can be hugely costly and capital may also be required. Such projects are financed internally, whereas the acquisition of machinery may come from external sources.

In many cases and because of tight liquidity, many organizations have to look for short term capital in the form of overdraft or loans in order to provide a cash flow cushion. Interest rates can vary from an organization to another and also according to the purpose of financing.

However, there may be traditional ways of raising funds, but they are not the only ones. There are many other sources available to companies which wish to rise capital. These alternatives include bank borrowing, government assistance, venture capital and franchising. All these have advantages and disadvantages and degrees of risk as well.

Based on this our problematic is as follows:

What is the optimal use of financing sources for the best profitability of a business project?

To answer this problematic, we set the following sub-questions:

1. What are the funding sources available to the organizations?
2. What are the methods that an organization uses to get the best funding sources for the most profitability of its business projects?
3. What is the economic impact of a business project?

To answer these questions, it is necessary to take in consideration the following assumptions:

Assumption01:

A company might raise new funds from the following sources:

- capital markets:
 - a - new share issues for example by companies acquiring stock market listing.
 - b - right issues: loan stock, retained earnings, bank borrowing.

Assumption02:

profitability indicators: TRI, payback, net values.

To demonstrate the impact of funding sources on the profitability of a business project, our study will be structured into three chapters.

The first chapter entitled: Funding sources of investments, we will illustrate the different concepts related to the funding sources through two sections:

- Funding sources of investments: in this section we will explain its definitions, type and characteristics.
- Classification of funding sources: this second section consists also of some definitions, classification and characteristics.

The second chapter entitled: Financial Evaluation criteria, discuss the financial evaluation criteria and the different methods which allow to determine the profitability of a business project in both certain and uncertain future.

The third chapter entitled: Financial Evaluation of a business project, we will apply the financial criteria illustrated in the second chapter in business project.

In this third chapter, we will apply the financial criteria illustrated in the previous chapter on our study case project. This chapter will be subdivided into two sections that will be:

- Presentation of the case study company
- Case study: Which is consists in evaluating an extension production line project.

Reasons for research:

- this study will help us use our theoretical knowledge that we earned in the past five years, and also allow us develop our professional skills in financial evaluation.

Objective of the study:

Our objective throw this study are:

- Define funding sources and present its deferent caracteristiques in business projects.
- Explain the importance of the financial evaluation criteria of business projects using more than criteria in decision makings proses.

Limitation:

- Our study was beside on one project
- This study was made during hard times so it was hard to get the information's, travail, or go to the company.

CHAPTER I: Funding Sources of Investments

Introduction

Companies always seek sources of funding to grow the business. Funding, also called financing, represents an act of contributing resources to finance a program, project, or a need. Funding can be initiated for either short-term or long-term purposes. The company must explore all the financial options it can use, in order to reduce risk.

In the first section of this chapter, we will present the different funding sources of investment while in second section we will show their classifications.

Section 01: Different Sources of Funding

In this part we will illustrate most common type of funding that a company uses to finance its projects.

1.1. Retained earnings:

Retained earnings refer to that part of corporate's net profit after tax which is not distributed to the shareholders as dividend but is reinvested in the business. Retained earnings is a technique of financial management under which all profit after tax is not distributed amongst the shareholders as dividend but a part of profits is retained or reinvested in the company.

Retained earnings therefore, are the sum of a company's profits after dividend payments, since the company's inception. They are also called earned surplus, retained capital or accumulated earnings¹.

Retained earnings are an important source of internal or self-financing by a company. The savings generated internally by a company in the form of retained earnings are ploughed back into the company for diversification of its business. Retention of earnings by companies reduces their dependence on funds from external sources in order to finance their regular business needs.

In order for a company to grow, develop and expand, retained earnings have to be used for the accumulation of assets that generate income for the company. When income is generated it gives a company the means for expansion, as well as helps it in its research and development programmes. More income helps to improve the financial status of a company and also makes it more favorable in the eyes of investors².

Retained earnings is favorable for companies as issuing of new capital is inconvenient as well as involve floatation costs also if company raises debt, the financial obligation and risk will increase. Retained earnings not only give rise to growth in the value of the firm but also appreciate the value of its shares³.

¹ NOMAN (A), EFFICIENCY, FINANCE, AND VARIETIES OF INDUSTRIAL POLICY : GUIDING RESOURCES, LEARNING, AND TECHNOLOGY FOR SUSTAINED GROWTH, Columbia University Press, 2016, p.34.

² https://shodhganga.inflibnet.ac.in/bitstream/10603/63619/10/10_chapter%201.pdf

³ Idem

1.1.1. The Purpose of Retained Earnings:

¹Retained earnings represent a useful link between the income statement and the balance sheet, as they are recorded under shareholders' equity, which connects the two statements. The purpose of retaining these earnings can be varied and includes buying new equipment and machines, spending on research and development, or other activities that could potentially generate growth for the company. This reinvestment into the company aims to achieve even more earnings in the future.

If a company does not believe it can earn a sufficient return on investment from those retained earnings (i.e., earn more than their cost of capital), then they will often distribute those earnings to shareholders as dividends or share buybacks.

1.1.2. The retained earning formula:

The RE formula is as follows:

$\text{RE} = \text{Beginning Period RE} + \text{Net Income/Loss} - \text{Cash Dividends} - \text{Stock Dividends}$
--

Where RE = Retained Earnings

At the end of each accounting period, retained earnings are reported on the balance sheet as the accumulated income from the prior year (including the current year's income), minus dividends paid to shareholders. In the next accounting cycle, the RE ending balance from the previous accounting period will now become the retained earnings beginning balance.

The RE balance may not always be a positive number, as it may reflect that the current period's net loss is greater than that of the RE beginning balance. Alternatively, a large distribution of dividends that exceed the retained earnings balance can cause it to go negative.

1.1.3. The net Income impact on the retained earnings:

²Any changes or movement with net income will directly impact the RE balance. Factors such as an increase or decrease in net income and incurrence of net loss will pave the way to either business profitability or deficit. The Retained Earnings account can be negative due to large, cumulative net losses. Naturally, the same items that affect net income affect RE.

¹ Ibid,p 24

² MULLER (E), ANGLAIS DES AFFAIRES, Foucher,2018,p45

³ CASELI (S) and NEGRI (G),PRIVATE EQUITY AND VENTURE CAPITAL IN EUROPE MARKETS, TECHNIQUES, AND DEALS, Elsevier, Uk, 2018.,p 176-177

1.1.4. The dividends impact on the retained earnings:

³Distribution of dividends to shareholders can be in the form of cash or stock. Both forms can reduce the value of RE for the business. Cash dividends represent a cash outflow and are recorded as reductions in the cash account. These reduce the size of a company's balance sheet and asset value as the company no longer owns part of its liquid assets. Stock dividends, however, do not require a cash outflow. Instead, they reallocate a portion of the RE to common stock and additional paid-in capital accounts. This allocation does not impact the overall size of the company's balance sheet, but it does decrease the value of stocks per share.

At the end of the period, we can calculate the final Retained Earnings balance for the balance sheet by taking the beginning period, adding any net income or net loss, and subtracting any dividends.

1.1.5. Advantages of retained earnings:

The retained earnings benefits for companies are:

- Companies which retain their earnings can face unforeseen contingencies, capital market crisis and other downturns.
- Retained earnings helps to stabilize the dividend policy of companies, improves companies' relation with its shareholders.
- Appreciates the value of shares of companies.
- Retained earnings is the most convenient and economical method of finance and involves no legal formalities.
- Retained earnings helps to keep the financial structure of company's fully flexible and increase the credit worthiness of companies.
- Due to retention of earnings the growth and modernization plans of companies don't suffer due to lack of finance.

Though, retained earnings is an important and cheap source of finance as compared to external sources of finance available to companies and gives benefits and advantages to companies, shareholders and society but it also carries some dangers with it like the heavy reinvestments of

such profits year after year by a company may cause dissatisfaction among shareholders as they may get lower dividends.

1.1.6. Disadvantages of Retained Earnings:

Retention of earnings may tempt the management to raise bonus shares to the equity shareholders leading to over capitalization, the companies may not always use the retained earnings to promote the interests of shareholders. Instead, it may be invested in unprofitable Eivenues or misused by locking up them in those business concerns which are against the interests of shareholders, retained earnings can be used to manipulate the share prices of stock exchange. The company may keep the dividend rate very low so as to purchase the shares at very lower prices and later by increasing dividends rates, it may reap benefits from higher share prices.

1.2. Debt financing:

¹Debt financing occurs when a firm raises money for working capital or capital expenditures by selling debt instruments to individuals and/or institutional investors. In return for lending the money, the individuals or institutions become creditors and receive a promise that the principal and interest on the debt will be repaid. The other way to raise capital in the debt markets is to issue shares of stock in a public offering; this is called equity financing.

When a company needs money through financing, it can take three routes to obtain financing: equity, debt, or some hybrid of the two. Equity represents an ownership stake in the company. It gives the shareholder a claim on future earnings, but it does not need to be paid back. If the company goes bankrupt, equity holders are the last in line to receive money. The other route is debt financing—where a company raises capital by issuing debt.

Debt financing occurs when a firm sells fixed income products, such as bonds, bills, or notes, to investors to obtain the capital needed to grow and expand its operations. When a company issues a bond, the investors that purchase the bond are lenders who are either retail or institutional investors that provide the company with debt financing. The amount of the investment loan—also known as

¹<https://www.investopedia.com/terms/d/debtfinancing.asp>

principal—must be paid back at some agreed date in the future. If the company goes bankrupt, lenders have a higher claim on any liquidated assets than shareholders.

1.2.1. Cost of Debt financing:

A firm's capital structure is made up of equity and debt. The cost of equity is the dividend payments to shareholders, and the cost of debt is the interest payment to bondholders. When a company issues debt, not only does it promise to repay the principal amount, it also promises to compensate its bondholders by making interest payments, known as coupon payments, to them annually. The interest rate paid on these debt instruments represents the cost of borrowing to the issuer.

The sum of the cost of equity financing and debt financing is a company's cost of capital. The cost of capital represents the minimum return that a company must earn on its capital to satisfy its shareholders, creditors, and other providers of capital. A company's investment decisions relating to new projects and operations should always generate returns greater than the cost of capital. If returns on its capital expenditures are below its cost of capital, then the firm is not generating positive earnings for its investors. In this case, the company may need to re-evaluate and re-balance its capital structure.

the formula for the cost of debt financing is:

$$\boxed{KD = \text{Interest Expense} \times (1 - \text{Tax Rate})}$$

where KD = cost of debt

Since the interest on the debt is tax-deductible in most cases, the interest expense is calculated on an after-tax basis to make it more comparable to the cost of equity as earnings on stocks are taxed.

1.2.2. Measuring debt financing:

One metric used to measure and compare how much of a company's capital is being financed with debt financing is the debt-to-equity ratio (D/E). For example, if total debt is \$2 billion and total stockholders' equity is \$10 billion, the D/E ratio is \$2 billion / \$10 billion = 1/5, or 20%. This means for every \$1 of debt financing, there is \$5 of equity. In general, a low D/E ratio is preferable to a high one, though certain industries have a higher tolerance for debt than others. Both debt and equity can be found on the balance sheet statement.

1.2.3. Debt Financing interaction with Interest Rates:

Some investors in debt are only interested in principal protection, while others want a return in the form of interest. The rate of interest is determined by market rates and the creditworthiness of the borrower. Higher rates of interest imply a greater chance of default and, therefore, a higher level of risk. Higher interest rates help to compensate the borrower for the increased risk. In addition to paying interest, debt financing often requires the borrower to adhere to certain rules regarding financial performance. These rules are referred to as covenants.

Debt financing can be difficult to obtain, but for many companies, it provides funding at lower rates than equity financing, especially in periods of historically low-interest rates. Another perk to debt financing is that the interest on the debt is tax-deductible. Still, adding too much debt can increase the cost of capital, which reduces the present value of the company.

1.3.Share Capital :

¹Share capital is the money a company raises by issuing common or preferred stock. The amount of share capital or equity financing a company has can change over time with additional public offerings.

The term share capital can mean slightly different things depending on the context. Accountants have a much narrower definition and their definition rules on the balance sheets of public companies. It means the total amount raised by the company in sales of shares.

Share capital is reported by a company on its balance sheet in the shareholder's equity section. The information may be listed in separate line items depending on the source of the funds. These usually include a line for common stock, another for preferred stock, and a third for additional paid-in capital.

Common stock and preferred stock shares are reported at their par value at the time of sale. In modern business, the "par" or face value is a nominal figure. The actual amount received by a company in excess of par value is reported as "additional paid-in capital."

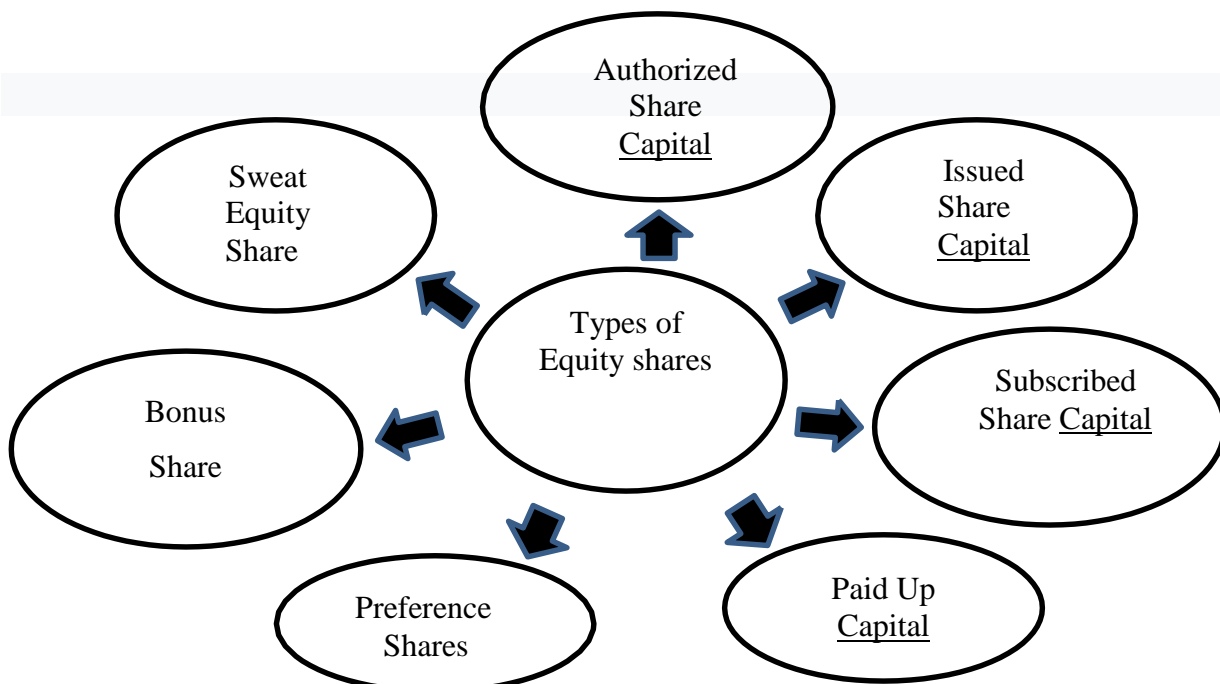
The amount of share capital reported by a company includes only payments for purchases made directly from the company. The later sales and purchases of those shares and the rise or fall of their prices on the open market have no effect on the company's share capital.

A company may opt to have more than one public offering after its initial public offering (IPO). The proceeds of those later sales would increase the share capital on its balance sheet.

1.3.1. Types of Share Capital:

²The different types of share capital is presented in the figure

¹PARKER (E), Finance in your own business, Bookstorm edition, South Africa 2011, p 14

Figur01: Different types of equity shares

Source: [www.efianacemanagement.com\(28/02/2019,20H\)](http://www.efianacemanagement.com(28/02/2019,20H))

As we can see from the figure 1 there is many types , here we will explain some of the important ones :

1.3.1.1. Authorized Share Capital:

Before a company can raise equity capital, it must obtain permission to execute the sale of stock. The company must specify the total amount of equity it wants to raise and the base value of its shares, called the par value.

The maximum amount of share capital a company is allowed to raise is called its authorized capital.

This does not limit the number of shares a company may issue but it puts a ceiling on the total amount of money that can be raised by the sale of those shares.

1.3.1.2. Issued Share Capital:

The total value of the shares a company elects to sell to investors is called its issued share capital. The par value of the issued share capital cannot exceed the value of the authorized share capital.

² ONYIRIUBA (L), Bank Risk Management in Developing Economies Addressing the Unique Challenges of Domestic Banks through Risk Management, Elsevier Edition, Uk ,2016,P 525

1.3.1.3. Share Capital on a Balance Sheet:

The technical accounting definition of share capital is the par value of all equity securities, including common and preferred stock, sold to shareholders.

However, people who are not accountants often include the price of the stock in excess of par value in the calculation of share capital. As noted, the par value of stock is nominal, typically \$1 or less. So, the difference between the par value and the real sale price, called paid-in capital, is usually considerable. Nevertheless, it is not technically included in share capital or capped by authorized capital limits.

1.3.1.4. Preference Shares:

Preference shares are the shares which promise the holder a fixed dividend, whose payment takes priority over that of ordinary share dividends. Capital raised by the issue of preference shares is called preference share capital¹.

The preference shareholders are in superior position over equity shareholders in two ways: first, receiving a fixed rate of dividend, out of the profits of the company,

before any dividend is declared for equity shareholder and second, receiving their capital after the claims of the company's creditors have been settled, at the time of liquidation. In short, the preference shareholders have a preferential claim over dividend and repayment of capital as compared to equity shareholders².

1.3.1.4.1. Types of Preference Shares:

The preference shares types classified below²:

1.3.1.4.1.1. Cumulative and Non-Cumulative:

The preference shares that have the right to collect unpaid dividends in the future years, in case the same is not paid during a year are known as cumulative preference shares. Non-cumulative shares, the dividend is not accumulated if it is not paid in a particular year.

1.3.1.4.1.2. Participating and Non-Participating:

Preference shares which have a right to participate in the extra surplus of a company shares which after dividend at a certain rate has been paid on equity shares are called participating preference shares. These non-participating preference shares do not enjoy such rights of participation in the profits of the company.

1.3.1.4.1.3 Convertible and Non-Convertible:

Preference shares that can be converted into equity shares within a specified period of time are known as convertible preference shares. Non-convertible shares are such that cannot be converted into equity shares. intervals say six months or one year.

Now let's understand what motivates the company to raise them:

1.3.1.4.2. Advantages of Preference Shares:

- It does not affect the control of equity shareholders over the management as preference shareholders don't have voting rights.
- Payment of fixed rate of dividend to preference shares may make a company to announce higher rates of dividend for the equity shareholders in good times.
- Preference shares have reasonably steady income in the form of fixed rate of return and safety of the investment.
- Also, they are suitable for those investors who want a fixed rate of return with low risk.
- Preference shareholders have a preferential right of repayment over equity shareholders in the event of liquidation or bankruptcy of a company.
- Preference capital does not create any sort of charge against the assets of a company.

1.3.1.4.3. Disadvantages of Preference Shares:

- The rate of dividend on preference shares is generally higher than the rate of interest on debentures.

¹BECKET (M), How the Stock Market Works: A Beginner's Guide to Investment, Sixth Edition, Kogan Page,2018,p10

² SHERMAN(J), Mergers and acquisitions from A to Z, Fourth Edition, AMACAOM,2018, p 195

<https://www.toppr.com/guides/business-studies/sources-of-business-finance/equity-shares-and-preference-shares/>
(05/06/2020,11H)

- The Dividend on these shares is to be paid only when the company earns a profit, there is no assured return for the investors.
- Preference shares are not preferred by those investors who are willing to take a risk and are interested in higher returns;
- Preference capital dilutes the claims of equity shareholders over assets of the company.
- The dividend paid is not deductible from profits as an expense. Thus, there is no tax saving as in the case of interest on loans.

1.4. Lease Finance:

Viewed in a broad perspective, a lease is construed as a contract or transaction between two parties in which a party owning the asset, called the 'lessor' or landlord' or 'owner', provides the asset for use over a certain period of time to the other party, called the 'lessee' or the 'tenant', for consideration in the form of periodic payments (called 'rent') with or without a further down payment. The international Accounting Standard No. 17 defines leasing as "an agreement whereby the lessor conveys to the lessee in return for rent the right to use an asset for an agreed period of time".¹

There are two main types of conventional leases: operating leases and financial leases.

1.4.1. Operating leases:

An operating lease is an agreement between:

- A lessor who owns an asset and who wants to earn a return without losing ownership; and
- A lessee who needs to use the asset and who cannot afford to buy it or does not want to own it.

It is a very straightforward agreement as we can see in this example. Let us suppose that Isra has just begun a two-year MBA program in the US. She finds a part-time job to help pay for tuition and looks for a car to drive to work every day. A car dealer offers her a new Ford Escort on a two-year lease term. She pays two months' instalment as deposit and drives the car off the lot the same day. The dealer agrees to arrange for insurance and take care of maintenance. At the end of two years, the car is to be returned to the dealer, and the leasing agreement would end for both parties.

- The dealer transfers possession of the car to Isra but retains ownership of the car throughout the lease period.
- Financing (based on leasing)
- Over the lease period, Isra makes monthly payments.

At the end of two years, Isra returns the car to the dealer.

1.4.2. Financial leases:

A financial lease is the other major type of lease. The main difference between this and the operating lease is that the lessee has the option to purchase the asset at the end of the lease.

This means that if Isra agrees instead to a financial lease, then the third step will be deferred.

At the end of two years, Isra decides to purchase the car. The dealer then transfers ownership of the car to Isra.

Leasing provides several advantages to lessees:

- Leasing ready-to-use equipment can be more attractive if the asset requires lengthy preparation and setting up. Specialized computer and telecommunications financing (based on leasing) are popular assets used in leasing.
- Leasing avoids having to own the asset that will be required only for a season or temporary period.
- Leasing for short periods protects against obsolescence. But of course, lease payments are accordingly higher.
- Lease payments can provide up to 100 per cent financing, whereas there are usually down payment requirements when buying.
- Leasing often comes with tax advantages and is employed by governments to encourage the use of certain assets. For example, if the government of a country is keen to promote computer literacy, it would provide generous tax deductions for computer leases.

1.5. Hire Purchase Finance:

Hire Purchase is defined as an agreement in which the owner of the assets lets them on hire for regular installments paid by the hirer. The hirer has the option to purchase and own the asset once all the agreed payments have been made.

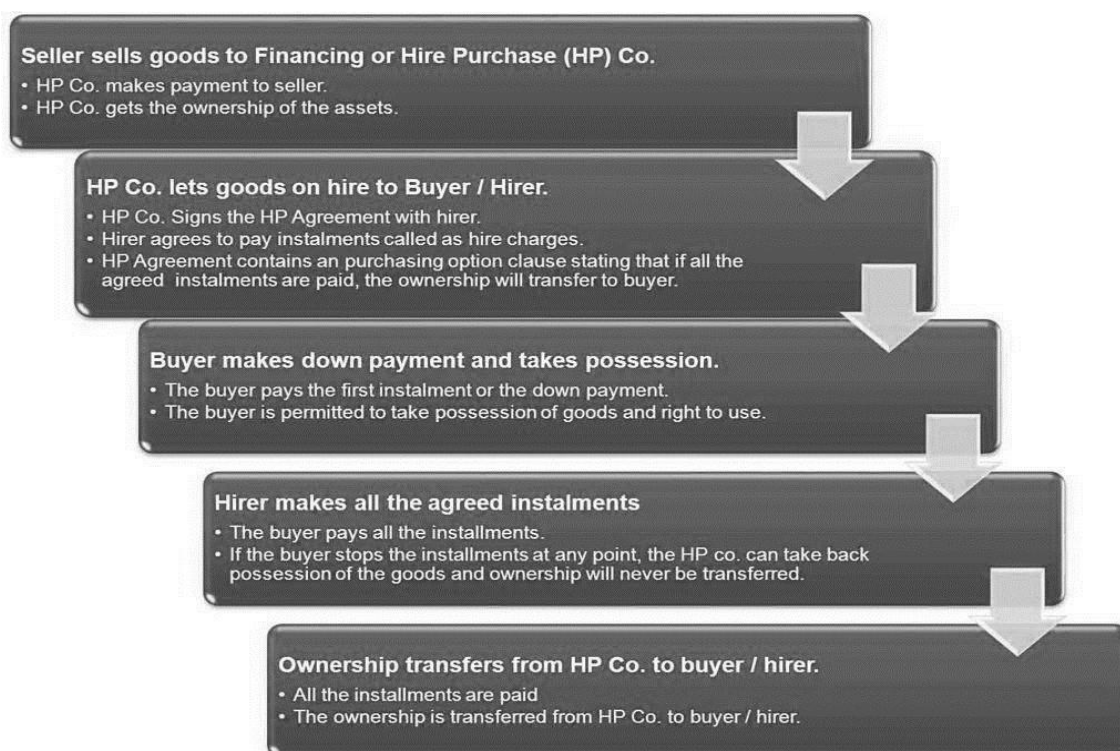
The term 'Hire-Purchase' is a UK term and is synonymous to 'rent-to-own' or 'installment plan' in various other countries. Owning goods through hire and purchase

let's companies improve their earnings performance. Not just beneficial to the hirer, this system is also the most effective and secure form of credit sales for the current owner of the asset.

Hire purchase is a method of purchasing or financing capital goods whereby the goods are accessible for use almost instantaneously but the payment is made in smaller parts over an agreed period. The ownership is transferred only after the paying all installments. Technically speaking, it is an agreement between the buyer (or user) of the asset and the financing company whereby the financing company purchases the asset on behalf of the buyer and the buyer utilized it for business purpose and pays back to the financing company in small installments called hire charges.

In other words, hire purchase can be defined as an option of financing or acquiring an asset for use whereby the financing company let the goods on hire to the buyer against small installments called hire charges and the buyer gets the right to use the asset with an option to purchase the asset by paying all such installments spread over a period of time. Hire purchase was very prominent for vehicle financing whether that is a personal car, commercial vehicle etc. but now equipment, machinery etc are also financed with hire purchase method.

Figure I-2 : Hire purchase process



Source: VINOD (K),op.cit,p7

¹ VINOD (K)op.cit,p 22.

1.6. Factoring:

¹Factoring means a financial arrangement between the factor and client, in which the firm (client) gets advances in return for receivables, from a financial institution (factor). It is a technique, in which there is an outright selling of trade debts by a firm to a third party, i.e. factor at discounted prices.

1.6.1. Types of Factoring:

²There are four type of factoring which listed below:

- **Recourse and Non-Recourse Factoring:** It is a type of arrangement, the financial institution, can resort to the firm when the debts are not recoverable. In non-recourse factoring, the factor cannot recourse to the firm, in case the debt turns out to be irrecoverable.
- **Disclosed and undisclosed Factoring:** This factoring is in which the factor's name is shown on the invoice of the goods or services asking the purchaser to pay the factor, is called disclosed factoring.
- **Domestic and Export Factoring:** When three parties to factoring, i.e customer, client, and factor, live in the same country, it is called as domestic factoring.
- **Export factoring:** also known as cross-border factoring. It is one where there are four parties involved, i.e. exporter (client), the importer (customer), export factor and import factor.

1.7. Angel Investors:

An angel investor (also known as a business angel, informal investor, angel funder, private investor, or seed investor) is an affluent (rich, wealthy) individual who provides capital for a business start-up, usually in exchange for convertible debt or ownership equity. A small but increasing number of angel investors invest online through equity crowd funding or

¹ <http://www.accountingnotes.net/financial-management/finance-sources/10-main-sources-of-short-term-fund/8090> (15/03/2019,9H)

²GILANTZ (M), NAVIGATING THE BUSINESS LOAN : GUIDELINES FOR FINANCIERS, SMALL-BUSINESS OWNERS, AND ENTREPRENEURS,Elsevier,2014,p12

³ GRANDGUILLOT (B) et (F), L'ESSENTIEL DE LA COMPTABILITE GENERALE 2015-2016 : MODELISATION COMPTABLE, OPERATIONS COURANTES,Fifth Edition,Gualino ,2015,p 110

Section02: Classification of funding sources:

It is very important for any company to know the classification of the funding sources to choose the most suitable source for its needs, in general, according to efinancemanagement², sources of financing are classified based on two criteria³:

- Time period
- Source of generation

2.1. Based on Time Period:

Sources of financing a business are classified based on the time period for which the money is required. The time period is commonly classified into the following three:

- Long term sources of funds
- Medium term sources of funds
- Short term sources of funds

2.1.1. Long Term sources of funds:

Long term sources fulfill the financial requirements of a business for a period more than 5 years. It includes sources such as:

- Equity Shares (Share capital)
- Preference Shares
- Retained Earnings
- Debenture
- Term Loans from (Financial Institutes, Government, and Commercial Banks)
- Venture Funding

2.1.2. Medium Term sources of funds:

Medium term financing means financing for a period of 3 to 5 years and is used generally for two reasons. One, when long-term capital is not available for the time being and second when deferred revenue expenditures like advertisements are made which are to be written off over a period of 3 to 5 years. Medium term financing sources can be in the form of one of them:

¹ MULLER (E),op.cit,p46

² <https://efinancemanagement.com/sources-of-finance> (15/06/2020, 10:40h)

- Preference Capital or Preference Shares
- Debenture / Bonds
- Medium Term Loans from
- Lease Finance
- Hire Purchase Finance

2.1.3. Short Term sources of funds:

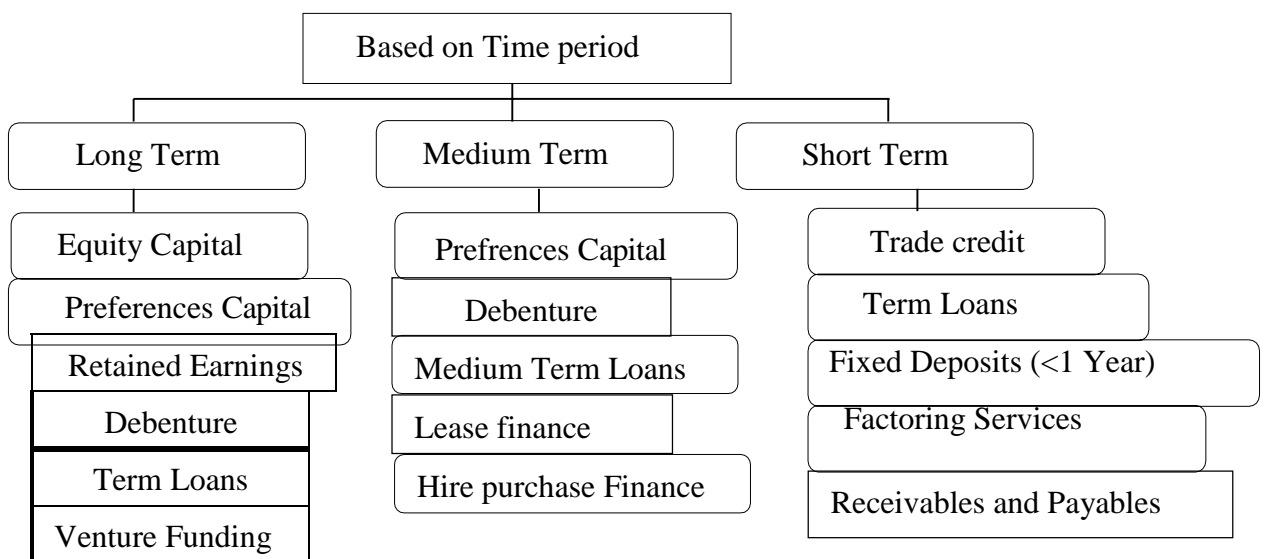
Funds which are required for a period not exceeding one year are called short-term sources.

- Trade credit
- Working Capital Loans from Commercial Banks
- Fixed Deposits for a period of 1 year or less
- Advances received from customers
- Creditors
- Payables
- Factoring Services
- Bill Discounting etc.

We summarize the classification according to this criterion in the figure below:

Figure I-3 : Source of Fund Based on Time Period

Source: Made by the student based on the explication above



2.2. Based on source of generation:

According to this classification basis, the source chosen by the company to fulfil its investment needs is generated by this latter or outside it, there are two types:

2.2.1. Internal sources:

The internal source is the one which is generated internally by the business, it is an important source that any company should focus on, it provides financial independency, these are as follows:

- Equity share
- Preferences shares
- Retained earnings
- Sales of assets (it is a simple financing technique, it consists in selling assets that re no more needed in the company, for example: selling a truck, old equipment, machine.)

2.2.2. External sources:

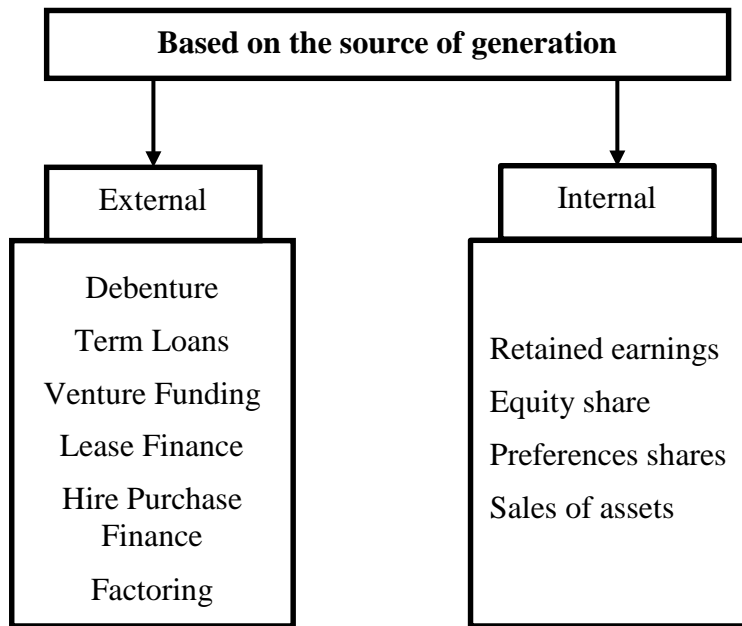
If the company's internal sources do not appear to be sufficient to cover its financing expenses, it then seeks external to support the lack of liquidity it has at its disposal. These sources include the following:

- Debenture
- Term Loans from (Financial Institutes, Government, and Commercial Banks)
- Venture Funding
- Lease Finance
- Hire Purchase Finance
- Factoring

A summary of this classification is showed in the figure below

¹ EEag Report on the European Economy 2010 · January 2009

Figure 4: Source of Fund Based on Source of Generation



Source: Made by the student based on the explication above

Conclusion

As we have noticed, investment is linked to a wide area of diverse and interesting topics of knowledge.

Therefore, in this chapter, we have precisely dealt with investment and projects. In short, we have examined the different available resources that the company may use to finance their investment in order to get the most compatible source to it by its nature, and its specification. We have defined them and explored their various criteria, typologies and classifications. We have also examined the different available resources that the company can use to finance its investment.

Since investment is mainly and before anything, a decision to be made, the company is expected to not only be aware of but also to master the different steps and components of the decision-making process and use different project evaluation tools in order to make that decision right, because investment is a primordial factor for a company's sustainability.

**CHAPTER II:
Profitability
Evaluation
Criteria of a
business
project**

Introduction

It is very likely for any company to find itself in front of many investment opportunities at the same time. Each of these investments consists of a choice. It is up to the personnel to choose between these opportunities. They, hence, have to use tools to determine the best investment.

Financial evaluation is the phase of the study of a project that makes it possible to analyse whether it is viable, and under what conditions, taking into account the standards and constraints imposed on it, and on the basis of the technical and commercial studies already carried out. It consists in valuing the flows resulting from previous studies to determine profitability and a sensitivity analysis conducted on the basis of the various risks incurred by the project and making it possible to define implementation strategies

In this chapter, the first section will be devoted to the different tools and techniques that can be used to carry out an effective assessment for any given investment project.

Financial evaluation is the phase of the study of a project that makes it possible to analyse whether it is viable, and under what conditions, taking into account the standards and constraints imposed on it, and on the basis of the technical and commercial studies already carried out. It consists in valuing the flows resulting from previous studies to determine profitability and a sensitivity analysis conducted on the basis of the various risks incurred by the project and making it possible to define implementation strategies¹.

Section01: Criteria for evaluating investments in certain futures:

Different criteria for evaluating the investments in the certain future are:

1.1. Static methods (a temporal):

These are the criteria that do not take into account the time factor. We can consider two criteria:

1.1.1. The average rate of return (ARR):

Accounting rate of return (ARR) is a formula that reflects the percentage rate of return expected on an investment, or asset, compared to the initial investment's cost. The ARR formula divides an asset's average revenue by the company's initial investment to derive the ratio or return that one may expect over the lifetime of the asset, or related project. ARR does not consider the time value of money or cash flows, which can be an integral part of maintaining a business¹.

The Formula for ARR:

$$ARR = \frac{\text{Average operating profit}}{\text{Average investment}} = \frac{\sum_{t=1}^n P_t / n}{I + RV / 2}$$

- **Pt**: Net accounting profit generated in period t.
- **I**: Initial investment.
- **N**: Project duration in years.
- **RV**: Residual value.

¹ YVES (S), EVALUATION FINANCIERE DES PROJETS (INGENIERIE DES PROJETS ET DECISION D'INVESTISSEMENT), 2eme Ed paris, P254.

1.1.1.1 Calculate Average Rate of Return (ARR):

1. Calculate the annual net profit from the investment, which could include revenue minus any annual costs or expenses of implementing the project or investment.
2. If the investment is a fixed asset such as property, plant, and equipment (PP&E), subtract any depreciation expense from the annual revenue to achieve the annual net profit.
3. Divide the annual net profit by the initial cost of the asset, or investment. The result of the calculation will yield a decimal. Multiply the result by 100 to show the percentage return as a whole number.

1.1.1.2. The average rate of return method is used as a basis for:

Average rate of return is a capital budgeting metric that's useful if you want to calculate an investment's profitability quickly. Businesses use ARR primarily to compare multiple projects to determine the expected rate of return of each project, or to help decide on an investment or an acquisition. ARR factors in any possible annual expenses, including depreciation, associated with the project. Depreciation is a helpful accounting convention whereby the cost of a fixed asset is spread out, or expensed, annually during the useful life of the asset. This lets the company earn a profit from the asset right away, even in its first year of service¹.

1.1.1.3. Advantages of the average rate of return:

It is easy and quick to calculate because it refers to available accounting data.

1.1.1.4. Disadvantages of the average rate of return²:

- It does not take into account the recovery of flows.
- It is calculated on the basis of the result after depreciation and tax, excluding the result does not correspond to a cash flow.
- The choice of reference rate for judging the calculated rate of return of a project is rather arbitrary; this rate cannot be set according to precise rules.
- In conclusion, the average rate of return is a poor criterion for selecting a project because its contribution of information is rather low.

¹HAWAWINI (G), VIALLET (C), FINANCE FOR EXECUTIVES : MANAGING FOR VALUE CREATION, Second Edition, Thomson,2001,p222.

²RIVET (A), GESTION FINANCIERE : ANALYSE ET POLITIQUE FINANCIERE DE L'ENTREPRISE, Edition Ellipses Marketing S. A, Paris, 2003, P. 138.

1.1.2. The payback period (BP):

The Payback Period shows how long it takes for a business to recoup an investment. This type of analysis allows firms to compare alternative investment opportunities and decide on a project that returns its investment in the shortest time, if that criteria is important to them.

Payback Period Formula:

To find exactly when payback occurs, the following formula can be used:

$$I_0 = \sum_{t=1}^{PBP} CF_t$$

Where:

I₀: Initial investment;

PBP: Payback period.

CF: Cash flows generated in period t;

This criterion is based on the idea that the faster the recovery of committed capital, the more interesting the project is.

According to the payback period rule, a project is acceptable if its payback period is shorter than or equal to a specified number of periods, known as the cutoff period. If the choice is between several mutually exclusive projects, the one with the short-est payback period should be selected:

1.1.2.2. The advantages are as follows:

In essence, the payback period is used very similarly to a Breakeven Analysis, but instead of the number of units to cover fixed costs, it considers the amount of time required to return an investment.

Given its nature, the payback period is often used as an initial analysis that can be understood without much technical knowledge. It is easy to calculate and is often referred to as the “back of the envelope” calculation. Also, it is a simple measure of risk, as it shows how quickly money can be returned from an investment. However, there are additional considerations that should be taken into account when performing the capital budgeting process¹.

¹ BOSSU (S), HENROTTE (P), AN INTRODUCTION TO EQUITY DERIVATIVES : THEORY AND PRACTICE, Second Edition, , John Wiley & Sons, 2012,p7

1.1.2.3. the disadvantages are as follows:

- **Profitability:** While the payback period shows us how long it takes for the return of investment; it does not show what the return on investment is. If we only use this method, we will find out that we are in this setuation.

The second project would have a payback period more years then the first one but generate higher returns

on investment than the first project. However, based solely on the payback period, the firm would select the first project over this alternative. The implications of this are that firms may choose investments with shorter payback periods, at the expense of profitability.

- **Risk and the Time Value of Money:** Another issue with the payback period is that it does not explicitly discount for the risk and opportunity costs associated with the project. In some ways, a shorter payback period suggests lower risk exposure, since the investment is returned at an earlier date. However, different projects may have exposure to different levels of risk even during the same period.

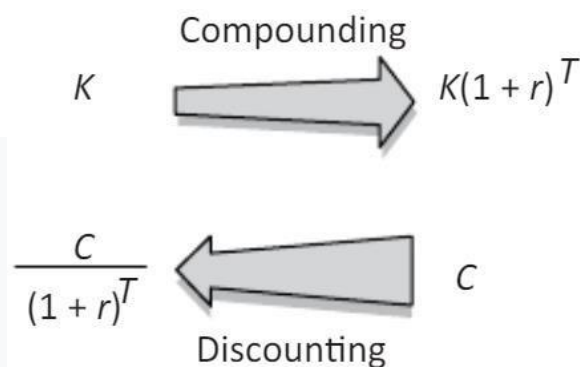
1.2. Dynamic (temporal) methods:

Unlike static methods, dynamic methods take into account the time factor, they are based on discounting, which consists in determining the immediate value of future flows generated by the investment. The interest of these methods lies in the consideration of time, which is¹:

1.2.1. Notion of Discounting:

The act of determining the present value of future cash flows. Because money is subject to inflation and has the ability to earn interest, one dollar today is worth more than one dollar tomorrow. Discounting, then, is the act of determining how much less tomorrow's dollar is worth. For example, a bank may loan a sum of money and schedule repayments at \$100 per month for 10 years. The bank may then discount the value of payments and determine exactly how much (in today's dollars) it will have received once the loan is paid of flows.

¹ WU (C), BUYYA (R), Cloud Data Centers and Cost Modeling : A Complete Guide To Planning, Designing and Building a Cloud Data Center, Elsevier Science, 2015,p 642

FigureII.1 : Compounding and Discounting

Source: Bossu(S), Henrotte (P),op.cit,p 7

1.2.1.1. Time Value of Money and Discounting:

When a car is on sale for 10% off, it represents a discount to the price of the car. The same concept of discounting is used to value and price financial assets. For example, the discounted, or present value, is the value of the bond today. The future value is the value of the bond at some time in the future. The difference in value between the future and the present is created by discounting the future back to the present using a discount factor, which is a function of time and interest rates.

1.2.1.2. Discounting and Risk:

In general, a higher the discount means that there is a greater the level of risk associated with an investment and its future cash flows. Discounting is the primary factor used in pricing a stream of tomorrow's cash flows. For example, the cash flows of company earnings are discounted back at the cost of capital in the discounted cash flows model. In other words, future cash flows are discounted back at a rate equal to the cost of obtaining the funds required to finance the cash flows. A higher interest rate paid on debt also equates with a higher level of risk, which generates a higher discount and lowers the present value of the bond. Indeed, junk bonds are sold at a deep discount. Likewise, a higher the level of risk associated with a particular stock, represented as beta in the capital asset pricing model, means a higher discount, which lowers the present value of the stock¹.

1.2.2. Net Present Value (NPV):

One of most popular financial cost models or measurement is net present value (NPV). The formula for net present value looks similar to IRR,it includes the time value of money.

¹MARSH (C),Business and Financial Models, Kogan Page, Hong kong ,2013,p24

It compares the value of money today to the value of that same amount of money in the future because of inflation rate, capital cost, etc. We often use NPV for capital budgeting, where we estimate the investment profitability for a cloud project within a certain period of time. It discounts the future cash flow income or revenue with a specified interest rate. Normally, this rate is the capital cost or borrowing cost:

$$NPV = -I_0 + \sum CF_t * (1 + i)^{-t}$$

1.2.2.1. The use of Net Present Value (NPV) Analysis:

NPV analysis is used to help determine how much an investment, project, or any series of cash flows is worth. It is an all-encompassing metric, as it takes into account all revenues, expenses, and capital costs associated with an investment in its Free Cash Flow (FCF).

In addition to factoring all revenues and costs, it also takes into account the timing of each cash flow that can result in a large impact on the present value of an investment. For example, it's better to see cash inflows sooner and cash outflows later, compared to the opposite.

1.2.2.2. advantages of Net Present value (NPV):

The cash flows in net present value analysis are discounted for two main reasons, (1) to adjust for the risk of an investment opportunity, and (2) to account for the time value of money (TVM).

The first point (to adjust for risk) is necessary because not all businesses, projects, or investment opportunities have the same level of risk. Put another way, the probability of receiving cash flow from a US Treasury bill is much higher than the probability of receiving cash flow from a young technology startup.

To account for the risk, the discount rate is higher for riskier investments and lower for a safer one. The US treasury example is considered to be the risk-free rate, and all other investments are measured by how much more risk they bear relative to that¹.

¹ WU (C), BUYYA (R), op.cit,644.

The second point (to account for the time value of money) is required because due to inflation, interest rates, and opportunity costs, money is more valuable the sooner it's received.

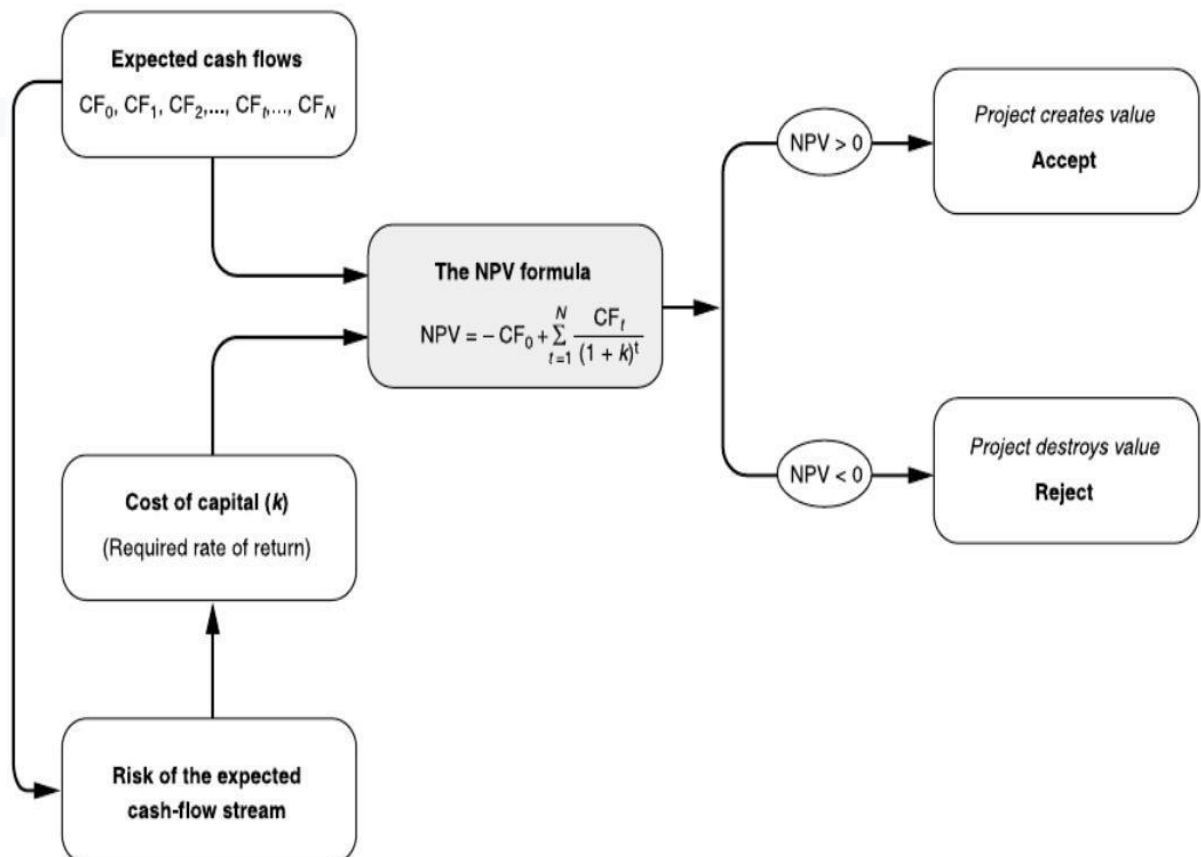
1.2.2.3. disadvantages of Net Present value (NPV):

-This criterion has a limit derived from the discount rate used. Indeed, the method assumes that the cash flows obtained from investments are reinvested in subsequent periods at the discount rate, or the investment rate may change from one year to the next.

-Thus, this criterion can only be applied if the opportunity cost of capital is known in a relatively satisfactory way.

one of the essential parameters of the decision to invest. These are criteria that take into consideration the value of money over time. Before developing the criteria with discounting, it is important to define the discount rate, which is considered a common denominator of these criteria.

FigureII.2: Steps Involved in Applying the Net Present Value Rule



1.2.3. Internal Rate of Return (IRR):

The Internal Rate of Return (IRR) is the discount rate that makes the net present value (NPV) of a project zero. In other words, it is the expected compound annual rate of return that will be earned on a project or investment.

When calculating IRR, expected cash flows for a project or investment are given and the NPV equals zero. Put another way, the initial cash investment for the beginning period will be equal to the present value of the *future* cash flows of that investment. (Cost paid = present value of future cash flows, and hence, the *net* present value = 0).

IRR Formula:

$$\sum_{t=0}^n CF * (1 + r)^{-t} = I0$$

Where:

F: cash flows.

r: the IRR of the project.

I0: Initial investment

1.2.3.1. Decision rule:

For independent projects, those with a IRR greater than or equal to an acceptance rate set by the firm are used.

For projects of the same size and mutually exclusive, the one with the highest TIR is selected. The advantages and disadvantages of the IRR are:

1.2.3.2. Advantages:

- It makes it easy to compare several exclusive projects by directly comparing their rates of return.
- It is easy to understand and apply.
- It is closely linked to NPV and generally leads to the same decisions with conventional cash flows.

1.2.3.3. Disadvantages:

The IRR has some limitations, including the following:

- In the context of ranking mutually exclusive projects (conflict with other decision criteria).
- The cash flows generated are reinvested in the following periods in the IRR.
- When a project generates successive positive and negative cash flows throughout its lifetime, several IRR values are obtained depending on the number of sign changes (The Multiple IRR Problem).

1.2.4. Profitability Index (P.I.):

The profitability index rule is a decision-making exercise that helps evaluate whether to proceed with a project. The index itself is a calculation of the potential profit of the proposed project. The rule is that a profitability index or ratio greater than 1 indicates that the project should proceed. A profitability index or ratio below 1 indicates that the project should be abandoned.

1.2.4.1. the Profitability Index Rule:

The profitability index is calculated by dividing the present value of future cash flows that will be generated by the project by the initial cost of the project. A profitability index of 1 indicates that the project will break even. If it is less than 1, the costs outweigh the benefits. If it is above 1, the venture should be profitable.

The profitability index formula:

$$PI = \frac{NPV}{I_0} + 1$$

where:

PI: the profitability index

NPV: net price value

I_0 : iniale Investment

¹ GABRIEL (H), CLAUDE (V), op.cit,p 226

1.2.4.2. Profitability index (PI) vs net price value (NPV) :

The profitability index rule is a variation of the net present value (NPV) rule. In general, a positive NPV will correspond with a profitability index that is greater than one. A negative NPV will correspond with a profitability index that is below one.

PI differs from NPV in one important respect: Since it is a ratio, it provides no indication of the size of the actual cash flow.

1.2.4.3. Profitability index vs IRR:

Internal rate of return (IRR) is also used to determine if a new project or initiative should be undertaken. Broken down further, the net present value discounts after-tax cash flows of a potential project by the weighted average cost of capital (WACC).

1.2.4.4. The advantages:

- This indicator has the advantage of reporting the increase in project-related wealth based on the calculation of the NPV to the discounted amounts invested to generate it.
- It allows you to compare projects with different investment amounts.
- It allows you to choose between projects that are not exclusive to each other in a situation of capital rationing.

1.2.4.5. The disadvantages:

The profitability index does not really solve the problem of size difference, in fact in the case where the smallest project (which initially had the lowest NPV value) gets the best index, choosing it assumes that one is able to reinvest the difference in capital expenditure over the same lifetime and that it yields a higher return than the difference in NPV.

1.3. Integrated methods (global criteria):

The figures presented so far are based only on the discount rate. They assume that the company raises financing resources from outside at the cost of capital and lends them to these projects at the same rate. They make it possible to take into account the

existence of reinvestment opportunities, their calculation consists in first determining the acquired value, then we calculate the global criteria (NPV_G , IRR_G , PI_G)

The reinvestment rate:

This is an average rate at which the cash flows generated by the company are actually reinvested.

The acquired value:

At the end of the period under consideration, it is obtained by capitalizing and then summing all the elements of the series.

1.3.1. The aggregate net present value (NPV_G):

The aggregate net present value is the difference between the present value of the

acquired value of cash flows and the amount of the investment. (NPV_G) measures the overall benefit of the package: initial investment plus reinvestment of cash flows. It is

represented by the following formula:

$$NPV_G = A (1 + i)^{-n} - I_0$$

Where:

A: Acquired value;

I_0 : Value of the initial;

i : Discount investment rate;

n: Life of the investment.

1.3.2. Overall internal rate of return (IRR_G):

IRR_G is the discount rate that equates the acquired value of cash flows "A" to the initial investment and is represented by the following formula¹:

We have:
$$I_0 = A(1 + IRR_G)^{-n}$$

So that we will get:

$$\text{IRR}_G = \left(\frac{A}{I_0} \right)^{1/n} - 1$$

1.3.3. Global profitability index (PIG):

The overall profitability index is the ratio between the present value of the value acquired by cash flows and the initial amount of the investment. It is represented by the following formula:

$$\text{PI}_G = \left(A / I_0 \right) (1 + i)^{-n}$$

Such as:

A: Discount annuity;

i : Discount rate ;

n: Year order;

I₀ : Invested capital.

1.3.4. Advantages and disadvantages of the global criteria are:

The global criteria have the advantage of highlighting the implicit reinvestment assumption that exists when calculating the NPV or IRR. But their main disadvantage is the choice of the reinvestment rate.

¹ PIGET (G), GESTION FINANCIERE DE L'ENTREPRISE, éd. ECONOMICA, Second Edition, Paris, 2005, P. 224

² CHRISSOS (J), et GILLET (R) : DECISION D'INVESTISSEMENT, 3 e Edition Dareios et Pearson, Paris, 2012, P.205.

Section02: Criteria for evaluating investments in uncertain futures

All of the above criteria are mainly used in the absence of uncertainty, and uncertainty refers to situations in which the economic agent has to make decisions whose consequences depend on external random factors. When it comes to the choice of investment, the uncertainty over future cash flows can have a wide variety of assets, such as the development of selling prices, production costs, market share of the company compared to its competitors, etc.

Uncertainty turns into risk when it can be measured, in particular by assigning a probability distribution to different possible events.

The objective is to bring out valuation methods in an uncertain future. There are methods based on probability and others based on game theory.

2.1. Probable methods:

These methods based on probability consideration include the scenario method, Hertz method, decision tree method:

2.1.1. The Scenario Method:

Scenario analysis is a process of examining and evaluating possible events that could take place in the future by considering various feasible results or outcomes. In financial modeling, this process is typically used to estimate changes in the value of a business or cash flow, especially when there are potentially favorable and unfavorable events that could impact the company.

Most business managers use scenario analysis during their decision-making process to

find out the best-case scenario, worst-case scenario while anticipating profits or potential losses. They use this process when they have a big investment coming up.

2.1.1.1. Generating cases to be used in Scenario Analysis:

managers and executives at a company generate different future states of the business. These future states will form discrete scenarios that include assumptions such as product prices, customer metrics, operating costs, inflation, interest rates, and other drivers of the business.

Managers typically start with 3 basic scenarios:

- **Base case scenario** – This is the average scenario, based on management assumptions. when calculating the net present value, the rates most likely to be used are the discount rate, cash flow growth rate, or tax rate.
- **Worst case scenario** – considers the most serious or severe outcome that may happen in a given situation. when calculating the net present value, they would take the highest possible discount rate and subtract the possible cash flow growth rate or the highest expected tax rate.
- **Best case scenario** – This is the ideal projected scenario and is almost always put into action by management to achieve their objectives. when calculating the net present value, use the lowest possible discount rate, highest possible growth rate, and lowest possible tax rate.

the mathematical expectation of the NPV is determined, and the project with a positive mathematical expectation is then selected. It is calculated as follows¹:

$$E(NPV) = \sum_{t=0}^n \frac{E(CF_t)}{(1+i)^t}$$

Such as:

E(NPV): the expectation of NPV;

E(CF_t): the cash flow expectation at period t ;

i: the discount rate;

n: the lifetime of the investment

¹ HACHICHA (A) : CHOIX D'INVESTISSEMENT ET DE FINANCEMENT, édition septembre 2013, P 24

² CHRISSOS (J), et GILLET (R) : DECISION D'INVESTISSEMENT, 3 e Edition Dareios et Pearson, Paris, 2012, P.205.

When the mathematical expectation of two projects is identical, the variance of the random variable and its standard deviation, which takes into account the risk, must be calculated. Thus the standard deviation is given by the following relationship²:

$$\text{VAR}(\text{NPV}) = -I_0 + \sum_{t=0}^n \frac{\text{VAR}(\text{CF}_t)}{(1+i)^t}$$

such as:

VAR(NPV): the variance of the NPV;

VAR (CF_t): the cash-flow variance at period t;

2.1.2. The Monte Carlo method:

The foundations of the Hertz method, better known as the Monte Carlo method, are close to the scenario method. It differs in the way probability coefficients are taken into account. The Hertz method consists in assigning each cash flow generating event of a probability law, then by drawing lots, calculating the NPV of a project characterized by a random value and thus proceeding a large number of times².

This accumulation of NPVs will then make it possible to construct the probability distribution law of the criterion. If the NPV is characterized by a positive mathematical expectation, then the project will be evaluated positively.

Hertz identifies nine factors that are likely to change in an uncertain way for an investment project: the size of the market, the expected market growth rate, the company's market share, the amount of the investment expenditure, the lifetime of the investment, the residual value, the selling price of the products or services, the operating costs and the fixed costs.

The operational implementation of this model requires the use of IT. Its interest lies more in the preliminary reflection on the variables and their variability than in the results.

2.1.2.1 The Decision Tree Method:

The decision tree is an oriented graph that represents the succession of decisions and events. Among the vertices of the graph (or nodes), we can distinguish decision nodes and event nodes.

A decision node represents a choice between several decisions. It is represented by a square. Each decision leads to an event node. The root of the decision tree is always a

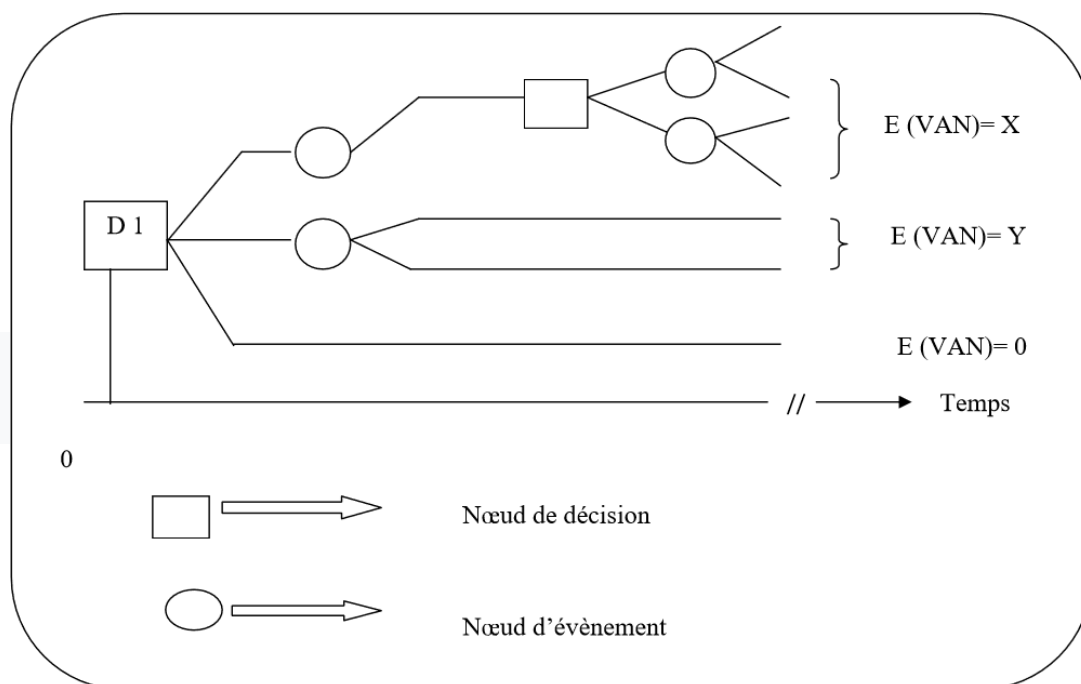
decision node.

An event node represents an alternative between several events. It is represented by a circle. Each event has an NPV and a probability attached to it. The sum of the probabilities assigned to the events of a node equals 1. For each node, the mathematical expectation of the NPV (and, possibly, the variance) is calculated.

At each decision node, the decision that is preferred is the one that leads to the event node for which $E(VPV)$ is maximum.

The calculation is done by going back time from the end to the beginning. The tree is gradually modified by eliminating, at each decision node, the branches of the dominated decisions.

Figure II.3: Schematic representation of the decision tree



Source : BARREAU (J) et al, Gestion financière, Ed. Dunod, Paris, 2004, P. 352.

2.2.Non-probabil methods:

In many cases, the future is not certain. However, the decision to invest must take into account each potential future event. The decision-maker then enters the field of strategic risk behaviour. We present below some decision criteria in a no probable space¹:

2.2.1 The WALD criterion (Maximin):

This criterion recommends choosing the best of the worst solutions, i.e. the least bad, so the aim is to minimize the maximum cost to be covered. In other words, we consider the worst state of nature and choose the decision α which, in this case, gives the best result. "The minimax is established to ensure that the maximum loss of the decision-maker will be kept to a minimum based on the assumption that the opponent is smart and will choose his strategy to maximize the other player's losses.

If it is a question of profit rather than cost, we seek to maximize the minimum profit and the criterion is then called Maximin².

2.2.2. Laplace's criterion:

The different states of nature are considered to be equally probable. For each decision, the arithmetic mean of the different results corresponding to each of the states of nature will be calculated. The decision giving the highest arithmetic mean will be chosen³.

2.2.3. The Savage criterion (Minimax):

Savage's criterion proposes to identify the most favourable strategy for each state of nature. Then, the revenue loss of each decision is determined in relation to each most favorable strategy chosen (the maximum regret for each decision). Finally, we retain the strategy with the lowest of the maximums of regret.

2.2.4. The Hurwitz criterion:

"The Hurwitz criterion identifies the decision that maximizes the average score. The average score is the weighted average of the minimum and maximum values of the "decisions Finally, in this section, any investment policy must be based on complex criteria and methods, taking into account the challengers associated with the projects it implements.

Among these criteria and methods are those that provide a precise, clear but partial indication. It must be compared with other qualitative or quantitative indicators developed by the company in order to serve as a basis for decision-making on an investment project.

¹ Idem, P 205.

² KOEHL (J), Op.cit, P 52.

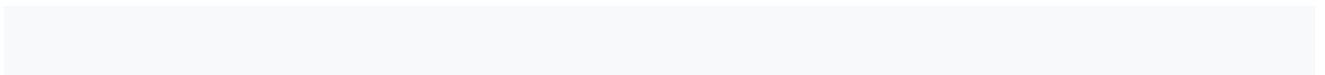
Conclusion

The reality of our economic world emphasizes the importance of investment. If it cares to stand out while remaining in the competition and ensuring its survival, the company is obliged to make investments. The company is required to recognize the importance and the significance of knowledge about the decision-making process and its phases in making effective and successful investment decisions.

In this chapter, we have noticed that the aim of the financial evaluation is to determine the profitability of any potential investment. It allows us to classify projects and select among them, even if they are not similar in duration and size, using various tools and methods of assessment.

To carry out the financial evaluation of an investment project, the company uses two types of tools, called selection criteria, the first type characterizing the certain universe in which the investor bases his decision on probable values estimating the parameters of the investment projects, and the second which is considered the most significant, takes into account the risk criterion (which is the essential specificity of investments).

The choice between these criteria is left to the decision-maker, who chooses those he considers most relevant and likely to allow him to make a credible decision about the launch or rejection of the investment project.



CHAPTER III:

Financial Evaluation of a business project

Introduction

In the previous chapter of this dissertation, we dialed with the theoretical side of a business project taking into consideration all its different aspects. We have also explored the concept of funding sources and several related notions.

Similarly, the second chapter voted to discussing the various evaluation criteria tools and highlighting its importance in investment.

Consequently, the following chapter will deal with the practical aspect of the study. We will attempt in what follows to apply the methods and techniques of financial evaluation on a project that consists of a new line of pipe production to decide whether or not the given project is profitable.

Since I didn't do my internship because of covid-19, I will not declare the name of the company from which i took the information from, examining this project will also help me to decide whether or not the line of production is guarantee-worthy.

Therefore, the present chapter will follow the subsequent outline:

We will apply the financial evaluation methods we dialed with in the second chapter, first section page 22 to 25, the business project related to the acquisition of fresh line of pipe manufacturing.

Section 01: Case study

The first section includes first the presentation of the project and then its evaluation based on the evaluation methods the we illustrated in the theoretical side of the work

1.1.Presentation of project

The present project consists of the extension of TECHNITUBE's capacities through the acquisition of a production line for plastic pipes reinforced with steel wire (steel spiral pipe).

This is the processing of plastic material. Two types of plastics can be distinguished: thermosetting and thermoplastic. The project will use thermoplastics. The transformation of the latter is generally carried out by various processes such as injection, blowing, stamping, and extrusion. It is the latter process that is used by the project. The production line is actually composed of two extrusion lines, a galvanized steel wire spiral forming line and the pipe assembly device. The steel spiral machine is placed between the two extrusion lines.

The line is composed of the following equipment:

- An extruder tr 50 r 1.25 motor ca 19.5 kw
- An extruder tr 75 r 1.25 motor ca 45 kw
- An undercoat extrusion head
- A cover extrusion head
- Production tools and mandrels
- A mandrel table
- A steel wire spiral machine
- A coil unwinder with flanges
- A small initial cooling tank m4
- A cooling tank m28
- Fine crown alarm sensors
- A control panel
- A thermoregulatory and control frame TR 75
- A thermoregulatory and control frame TR 50
- A spun rail
- A balance for the adjustment of the wire tension
- An ELCA electrical panel

- A Moretto granule vacuum cleaner
- A vertical knitting machine

1.2. Production capacity

It was calculated on the basis of the equipment supplier's data and the choice of work regime made by the promoter. The capacity is estimated at 1346 tonnes for 272 workdays.

1.3. Implementation planning

Table III-1: Implementation planning

Steps	Beginning	End	délais en mois
Applying for and obtaining credit	02/01/2020	03/03/2020	2 mois
Equipment order	26/02/2020	26/07/2020	5 mois
Installation of equipment	10/08/2020	09/09/2020	1 moi
Testing and commissioning	11/09/2020	06/10/2020	25 jours
Market test operation	06/10/2020	02/01/2021	3 mois
Official start of operation		02/01/2021	

Source: Project document

1.4. The project parameters

They are as follows:

1.4.1 The total amount of the investment

The entire investment concerns the acquisition of a steel spiral pipe production line at a cost of 37.4 million DA, the project does not require land, construction or layout, it complements the facilities of the existing production unit and benefits from its organization (human resources support) and infrastructure.

The overall investment cost = basic investment cost + working capital requirement.

1.4.2 Calculation of working capital requirement (WCR)

The calculation of the working capital requirement is based on the assumptions shown in the table, given that a working year of 272 days, considering a week of five days and 11 official national and international holidays:

Table III-2: The Assumptions for the working capital requirement calculation

Receivables	30 days of turnover
Material inventory	60 days of production
Final product inventory	30 days of production
Material Supplier	30 days of material consumption
Service provider	15 days of service consumption

Source: Company document

Table III-3: Calculation of Working capital requirement

	2020	2021	2022	2023	2024	2025	2026
Receivables	14705,625	39395,183 8	43459,9632	44668,566 2	45903,639 7	47165,735 3	48455,404 4
Variation Receivables		24689,558 8	4064,77941	1208,6029 4	1235,0735 3	1262,0955 9	1289,6691 2
Material inventory	30228,75	848104,41 2	87181,3235	89604,485 3	92080,367 6	94610,514 7	97196,029 4
Final product inventory	15114,375	424052,20 6	43590,6618	44802,242 6	46040,183 8	47305,257 4	48598,014 7
Total inventory	45343,125	1272156,6 2	130771,985	134406,72 8	138120,55 1	141915,77 2	145794,04 4
Variation inventory		1226813,4 9	- 1141384,63	3634,7426 5	3713,8235 3	3795,2205 9	3878,2720 6
Material suppliers	29501,139 7	30234,816 2	30980,4044	31738,125	32508,308 8	33290,845 6	34086,066 2
Service provider	229,90808 8	240,66176 5	247,996324	255,66176 5	263,76838 2	272,31617 6	281,30514 7
Total Suppliers	29731,047 8	30475,477 9	31228,4007	31993,786 8	32772,077 2	33563,161 8	34367,371 3
Variation Suppliers		744,43014 7	752,922794	765,38602 9	778,29044 1	791,08455 9	804,20955 9
Total WCR	30317,702 2	1281076,3 2	143003,548	147081,50 7	151252,11 4	155518,34 6	159882,07 7
Variation WCR		1250758,6 2	- 1138072,78	4077,9595 6	4170,6066 2	4266,2316 2	4363,7316 2

Source: Made by the student based on company document

1.4.3 Financing structure

For the financing of the project, a bank credit will be granted by the NATIXIS bank under the following conditions:

- Credit period: 7 years

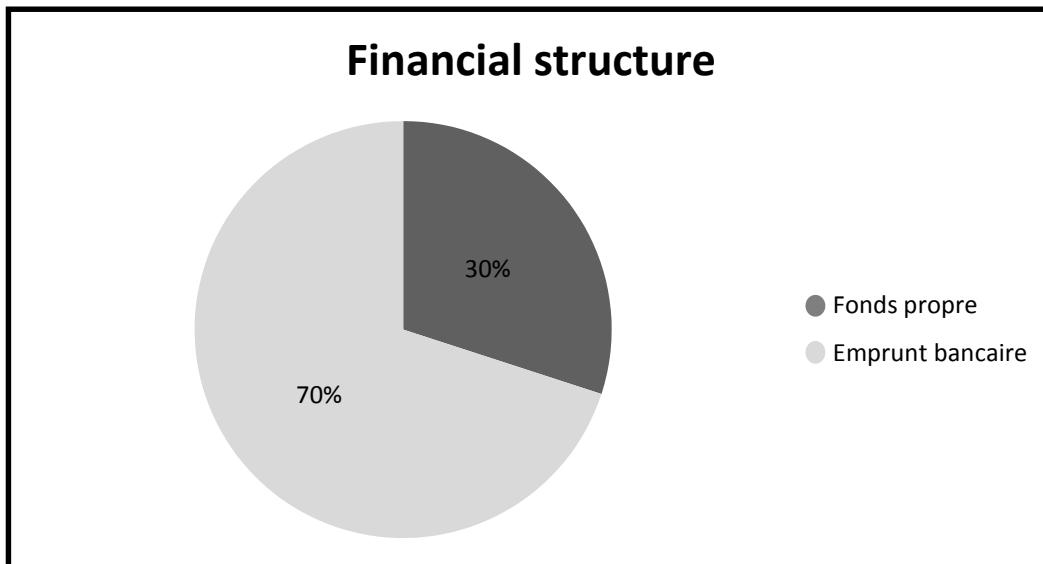
- Interest rate: 5.75% per year
- Deferred term: 24 months
- Quarterly repayment

- **Table III-4:** Financial structure

Investment cost	Montant	%
Equity capital	11220	30%
Bank loan	26180	70%
Total	37400	100%

- **Source:** Company document

- **Figure III-1:** Financial structure of the project



Source: Made by the student based on the data on the table above

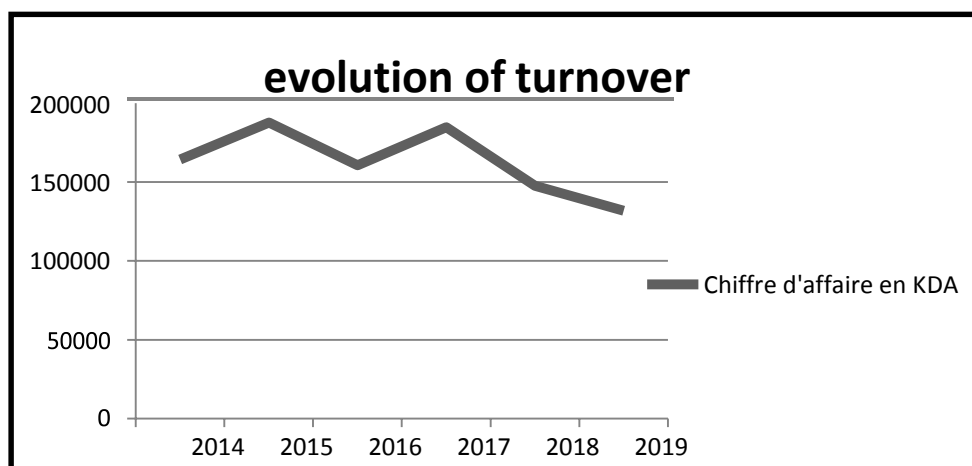
1.4.4. The Turnover

Table III-5: Turnover between 2013 and 2019 (real)

	2014	2015	2016	2017	2018	2019
Production (tons)	531241	689756	656856	675801	546315	508015
Turnover (KDA)	164401	187817	160689	184802	147745	131909

Source: Project document

Figure-2: Evolution of Turnover between 2014 and 2019



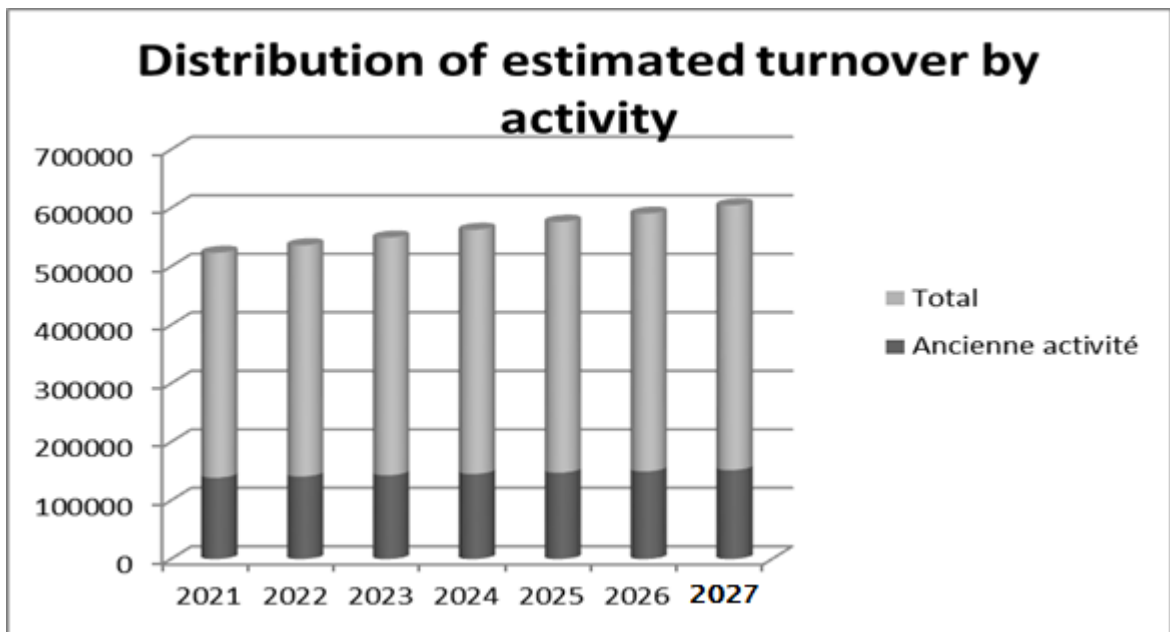
Source: Made by the student based on data in the above table

Table III-6: Estimated turnover

Product					2020	2022	2023	2024	2025	2026	2027
Steel spiral tube	245381	254043	262910	271985	281274	290780			300508		
Old activity	139092	141179	143296	145446	147628	149842			152090		
Total	384473	395222	406206	417431	428902	440622			452598		

Source: Project document

Figure-3: Distribution of provisional turnover by activity



Source: Made by the student based on data in table above

1.4.5 Estimated annual operating expenses:

These expenses represent the expenses necessary for the commissioning of the new production line

Table III-7: Material consumption

	2021	2022	2023	2024	2025	2026	2027
Compound	149955	154484	159088	163769	168528	173365	178282
Steel wire	24069	24796	25535	26287	27051	27827	28616
total new activity	174024	179280	184623	190056	195579	201192	206898
total old activity	86479	87776	89093	90429	91786	93163	94560
Total	260503	267056	273716	280485	287365	294355	301458

Source: Project document

Table III-8: Supplies consumption

	2021	2022	2023	2024	2025	2026	2027
Supplies new activity	1140	1151	1163	1175	1186	1198	1210
Supplies old activity	5833	5921	6010	6100	6191	6284	6378
Total	6973	7072	7173	7275	7377	7482	7588

Source: Project document

Table III-9: Service consumption

	2021	2022	2023	2024	2025	2026	2027
Care and maintenance	187	206	226	249	274	301	331
PIT and Internet	0	17	17	18	18	18	18
Insurance	60	54	48	42	36	30	24
Transportation	870	896	923	950	978	1006	1034
Various	19	21	23	25	27	30	33
Total new activity	1136	1194	1237	1284	1333	1385	1440
Total old activity	2084	2182	2248	2318	2392	2469	2551
Total	3220	3376	3485	3602	3725	3854	3991

Source: Project document

1.4.6. Taxes:

The project benefits from ANDI advantages and will not pay TAP or IBS during the first three years of operation for the extension activity, which will only be covered by TAP and IBS after the fourth year. Since the old activity is not exempt, it will normally pay TAP and IBS, as shown in the following table, which shows that TAP increases significantly after the ANDI benefits are due:

Table III-10: Taxes

	2021	2022	2023	2024	2025	2026	2027
Taxes	1333	2660	2934	3016	4162	4276	4393

Source: Project document

1.4.7. Personnel expenses:

Personal expenses are calculated, for all employees, on the basis of an employee retention policy, taking into account the 26% social security contribution rate currently in use.

Table III-11: Personnel expenses

	2021	2022	2023	2024	2025	2026	2027
Total new activity	0	3447	3482	3517	3552	3587	3623
Total old activity	26022	26413	26809	27211	27619	28033	28454
Total	26022	29860	30291	30728	31171	31620	32077

Source: Made by the student based on company document

1.4.8. Depreciation of investments

The depreciation used in our case is linear depreciation. It should be remembered that the latter consists in distributing the amount of the investment over the tax period equally over the years. This factor is essential for determining the cash flow generated by this project.

The life of this production line is **10 years**.

So the depreciation rate (linear) is: $t = 1/10 = 10\%$

Table III-12: Depreciation table of the investment

	Investment	Annuity payment	cumulative annuity	Net book value
2021	37400	3740	3740	33660
2022	37400	3740	7480	29920
2023	37400	3740	11220	26180
2024	37400	3740	14960	22440
2025	37400	3740	18700	18700
2026	37400	3740	22440	14960
2027	37400	3740	26180	11220
2028	37400	3740	29920	7480
2029	37400	3740	33660	3740
2030	37400	3740	37400	0

Source: Made by the student

1.4.9. Financial expenses:

Are related to the bank loan, and are calculated on the basis of the following data

- Amount of credit: 26 180 KDA

- Credit period: 7 years
- Annual interest rate: 5.75%.
- Quarterly interest rate: 1.375%.
- Deferred term: 24 months
- Quarterly repayment

The repayment period was defined on the basis of negotiations between TECHNITUBE and the bank. We calculate its repayment, the method used is constant depreciation. The results are displayed as follows:

Table-13: Calculation of credit repayment

Trimestre	Principal	Intérêt	Amortissement	Principal restant du	Interet/an
T1-2020	26180	376,00		26180	
T2-2020		376,00		26180	
T3-2020		376,00		26180	
T4-2020		376,00		26180	1504,00
T1-2021		376,00		26180	
T2-2021		376,00		26180	
T3-2021		376,00		26180	
T4-2021		376,00		26180	1504,00
T1-2022		376	1309	24871	
T2-2022		357	1309	23562	
T3-2022		338	1309	22253	
T4-2022		320	1309	20944	1391
T1-2023		301	1309	19635	
T2-2023		282	1309	18326	
T3-2023		263	1309	17017	
T4-2023		244	1309	15708	1090
T1-2024		226	1309	14399	
T2-2024		207	1309	13090	
T3-2024		188	1309	11781	
T4-2024		169	1309	10472	790
T1-2025		150	1309	9163	
T2-2025		132	1309	7854	
T3-2025		113	1309	6545	
T4-2025		94	1309	5236	489
T1-2026		75	1309	3927	
T2-2026		56	1309	2618	
T3-2026		38	1309	1309	
T4-2026		19	1309	0	188

Source: Made by the student based on data in company document

2.3.10. The income statement:

Table III-14: The income statement

	2021	2021	2022	2023	2024	2025	2026
steel spiral pipes turnover		245381	254043	262910	271985	281274	290780
Old activity		139092	141179	143296	145446	147628	149842
1/Production for the financial year		384473	395222	406206	417431	428902	440622
purchases consumed		267477	274129	280889	287759	294742	301837
Foreign services		4351	4458	4450	4646	4746	4849
2/Consumption for the year		271828	278587	285339	292405	299488	306686
3/Operating added value		112645	116635	120867	125026	129414	133936
Personnel expenses		29860	30291	30728	31171	31620	32077
Taxes, duties and similar payments		5060	5334	5416	6562	6676	6793
4/Gross operating surplus		77725	81010	84723	87293	91118	95066
Depreciation and amortization		3740	3740	3740	3740	3740	3740
5/Operating income		73985	77270	80983	83553	87378	91326
Financial revenues		0	0	0	0	0	0
Financial expense		1505	1392	1091	790	489	188
6/Financial income		-1505	-1392	-1091	-790	-489	-188
7/Ordinary income before taxes		72480	75878	79892	82763	86889	91138

Taxes rate		0,171	0,171	0,171	0,23	0,23	0,23
Taxes		12394,08	12975,138	13661,53 2	19035,49	19984,47	20961,74
Ordinary net income		60085,92	62902,862	66230,46 8	63727,51	66904,53	70176,26
Depreciation and amortization		3740	3740	3740	3740	3740	3740
Cash earnings		63825,92	66642,862	69970,46 8	67467,51	70644,53	73916,26
Variation in WCR	- 30317,7 0	1250758,62	- 1138072,78	4077,96	4170,61	4266,23	4363,73
Initial investissemen t	-37400						
Cash-Flow	- 7082,30	- 1186932,70 1	1204715,63 8	65892,50 8	63296,90 3	66378,29 8	69552,52 8

Source: made by student

1.5. Financial Evaluation

The determination of the discount rate:

Discount rate= Risk premium + Investment rate

Of which:

- The placement rate is equal to 5.75%.
- Risk premium = market risk (1%) + operational risk (1%) + liquidity risk (1%) In our case, the discount rate used is equal to: 8,75%

After having determined the parameters of the project, we proceed to assess its profitability by calculating the main selection criteria, which are:

- Net present value
- Internal rate of return
- Profitability Index
- Payback period

1.5.1. Net present value

Table III-15: NPV (KDA)

	Disbursement	Cash flow	(1+i)^n	Discounted Cash flow	Cumulative discounted cash flow
Initial investment	-7082,30				Cumulative discounted cash flow
2021		-1186932,70	1,0875	-1091432,369	-1098514,67
2022		1204715,64	1,18265625	1018652,409	-79862,26
2023		65892,51	1,28613867	51232,81796	-28629,44
2024		63296,90	1,39867581	45254,87831	16625,44
2025		66378,30	1,52105994	43639,5021	60264,94
2026		69552,53	1,65415268	42047,22399	102312,16

Source: Made by the student

So: NPV = 102312,16 KDA

Interpretation:

By discounting the net operating cash flow at a discount rate of 8.75%, we obtain a NPV greater than 0 in the order of **102312.16 KDA**, which means that the project is extremely profitable (3 times the initial investment)

The positive NPV of the proposed acquisition of this new line means that all cash flows expected in the future and discounted to date cover the initial investment and generate a surplus of **102312.16 KDA** considered as enrichment.

1.5.2. Internal rate of return (IRR)

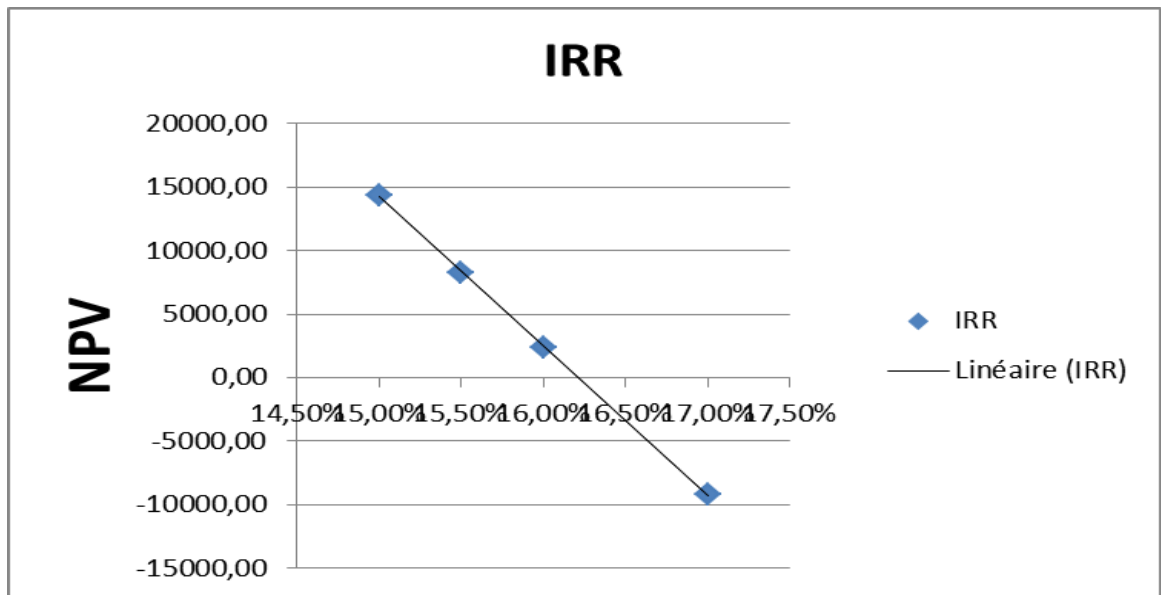
$$\sum_{t=0}^n CF * (1 + IRR)^{-t} = I0$$

16% —————> NPV=2323,55 KDA

16,5% —————> NPV=-3490,61 KDA

IRR = 16,2 %

Figure-4: Internal rate of return



Source: Made by the student

Interpretation:

The IRR is 16.20%, well above the minimum acceptable rate of return imposed by the company (discount rate) 8.75%, which means that the investment project is acceptable since it will contribute to improving the company's overall profitability.

1.5.3. Payback period

$$I_0 = \sum_{t=0}^{PBP} CF_t (1 + i)^{-t}$$

PBP: 28629,44 / 45254,88 = 0,63

0,63*12= 7,56 (month)

0,56*30= 17 (day)

According to the previous cash flow table, the PBP is equal to: 3 years + 7 months + 17 days

Interpretations

The current investment represents a payback period of 3 years + 7 months + 17 days.

This means that the project accepts an average return of liquidity

We note that the payback period for the investment is between the 3rd and 4th year, which corresponds to the point at which the year axis intersects the cumulative net cash flow curve of the project. At this point the flows become positive.

1.5.4. Profitability Index:

$$IP= 1 + \frac{NPV}{I_0}$$

$$IP= 1+(102312,16 / 37400) = 3,73$$

PI= 3,73

Interpretations

The profitability index of 3.73 explains that for every 1KDA invested, 3.73KDA is recovered.

The project has an IP of 3.73 which is greater than 1, so the project is financially profitable. This confirms the previous results of the project's financial profitability

Table III-16: Summary of the results of the financial evaluation

Indicators	Results
NPV	102312.16 KDA
IRR	16,2%
PBP	3 years + 7 months + 17 days.
PI	3,73

Source: Made by the student based on the results of financial evaluation

As shown in the table above, we carried out a financial evaluation to examine the profitability of the new production line; we applied the tools presented in the second chapter.

Conclusion

After this practical part, we can say that project evaluation has a very important role for any institution, in order to reflect the financial health of companies, and also remains a key tool in funding sources choice.

The profitability assessment allowed us to conclude that the proposed project is capable of generating a certain profitability and consequently an enrichment for the company.

The project is economically viable and financially profitable.

We evaluated the project over six years. The project use two funding sources of investment (equity share and bank lion). From this perspective, and in the light of the results obtained from the evaluation of the project using traditional criteria, the project is considered profitable, its net present value being positive (102312.16 KDA), with an internal rate of return of 16.20%, This means that the project allows to recover its initial capital in 3 years + 7 months + 17 days.

**GENERAL
CONCLUSION**

This research aimed to provide a better understanding of the importance of financial evaluation of investments in choosing the funding sources and its impact on whether we accept a project or refuse it, in other words, the study aimed to answer the following question: " What is the optimal use of financing sources for the best profitability of a business project ". To handle this research in depth, this paper aim to explore the different investment funding sources and the place of the financial evaluation through this process.

In this work, we have relied on classic financial evaluation tools, simple and easy to use to asses an investment project. We have adapted and applied them to our particular subject and study context. combined with a set of financial assessment tools, allowed us to prove the importance of financial evaluation and its great impact on the choosing of the funding sources.

That being said, the results of our research are as follow:

The observation of the economic reality, surrounding environment and decision complexity; has been very informative and allowed us to highlight the main concepts of investment funding sources. To this end we found that the investment decision making in choosing the funding sources is the most important element that any company should really focus on.

On the second level, the findings obtained from this case study helped us to understand the role of financial evaluation, the utility of its techniques and the wide field of its application. Indeed, the results revealed that financial evaluation occupies sensitive position when it comes to selecting a project. This latter provides a clear vision on the future of investments which helps to avoid and minimize the risks that faces the prosperity of any business.

In view of these findings, we can confirm our first assumption: A company might raise new funds from the funding sources that is: equity share and bank lions.

Although our study focused on one project, but the results were conformed which is a guarantee certificate to TECHNITUBE.

Furthermore, on studying each and every evaluation criterion presented in this research, we find that although they are easy and simple to use, they are very helpful to assess any project and every decision maker even if one who has not a bit of knowledge in finance can easily understand and apply those criteria, plus, we showed that the wide application of those criteria (Banks, companies, Financial institutions, Lease institutions and our case a Guarantee funde d.)

In accordance with these findings, we can confirm our second hypothesis, which postulates that The financial evaluation methods (NPV, IRR, PI...) are sufficient for choosing optimal funding sources. Although they have some advantages and sometimes they give opposite results they remain the most used criteria worldwide. This confirmation comes also to answer our second sub questions which consists on determining the criteria used to evaluate an investment.

Finally, on the economic level, the study of the impact of financial evaluation on choosing funding sources in our case deciding whether the project is guarantee worthy or not, we found after discussions with the financial analysts in charge that even though the main objective of any business is to create value which is translated in money creation and providing more financial resources for upcoming investment but it is not the only criteria that acceptance or rejection of a client file, also, the companies policy first objective is to promote investments, which leads to economic development therefore in order for a promoter to get a confirmation, the project must have an economic impact, which will promote business and create new sources of finance.

The project in case, which is a an extension project by acquisition of a new production line designed to manufacture a very special type of tube (Steel spiral tube) that is totally imported, present the following evaluation criteria, a positive Net Present Value of 102312.16 KDA which makes this project very profitable, also an internal rate of revenue of 16,20 % which according to the promoter is very sufficient for his company, a Profitability index of 3,73, and after calculating the Payback Period we found that this project is expected to recover its initial expenditure within 3 years + 7 months + 17 days.

The guarantee certificate was given to TECHNITUBE, not only based on the results of the financial evaluation presented which shows that the project is profitable but also based on its economic impact, after analyzing this project, we found that The economic impact of the project is very significant because:

1. It offers a product necessary for the development of agriculture.
2. It offers a product necessary for drinking water and gas supply as well as for its wastewater network
3. For industry by offering piping to the transport of process products (compressed air, gas, liquid, and even solid)
4. The project will eliminate foreign exchange depreciation to the extent that it produces a product that is currently imported. It may even contribute in the near future to the export of products.
5. It creates employment opportunities (project requires 8 employee)

In view of these findings, we can confirm the third hypothesis Investments have an economic impact. Which match perfectly our third sub question 3. What is the economic impact of an investment?

Based on the results of our study, as well as our findings in the field, we have compiled a list of recommendations on various points, including:

1. Given the important role of Financial evaluation, although its tools are sufficient, Investors should find a new methods and tools to achieve a better evaluation, this latter would provide them better vision on the investment future.
2. Given the importance of funding sources, it would be interesting to study all the impacts a projects can have and not relying only on Financial evaluation (In our case, studying the economic impact). Banks and financial institutions should also take into consideration the economic impact before granting any loan.

References

References

1. Books

50MINUTES.COM, *EFFECTIVE PROJECT MANAGEMENT: LEAD YOUR TEAM TO SUCCESS ON EVERY PROJECT*,2015.

ADAIR (J), *DECISION MAKING AND PROBLEM SOLVING*, Third Edition, Kogan Page,2016.

BECKET (M), *HOW THE STOCK MARKET WORKS : A BEGINNER'S GUIDE TO INVESTMENT*, Sixth Edition, Kogan Page,2018

BOSSU (S), HENROTTE (P), *AN INTRODUCTION TO EQUITY DERIVATIVES : THEORY AND PRACTICE*, Second Edition, , John Wiley & Sons, 2012.

BOUGHABA (A), *ANALYSE ET EVALUATION DE PROJET*, éd. Berti, Paris, 2005

BOUGHABA Abdallah, «ANALYSE ET EVALUATION DE PROJET »COURS, ETUDE DE CAS CORRIGÉES, SIMULATION, éd BERTI, Alger 2005

CASELI (S) and NEGRI (G),*PRIVATE EQUITY AND VENTURE CAPITAL IN EUROPE MARKETS, TECHNIQUES, AND DEALS*, Elsevier, Uk, 2018.

CHRISSOS (J), et GILLET (R) : *DECISION D'INVESTISSEMENT*, Third Edition Dareios et Pearson, Paris, 2012.

DAUD (A) and CHEFF (K),*ISLAMIC FINANCE: WHY IT MAKE SENSE FOR YOU*, Marshall Cavendish International, Singapore ,2013.

GILANTZ (M), *NAVIGATING THE BUSINESS LOAN : GUIDELINES FOR FINANCIERS, SMALL-BUSINESS OWNERS, AND ENTREPRENEURS*,Elsevier,2014

GRANDGUILLOT (B) et (F), *L'ESSENTIEL DE LA COMPTABILITE GENERALE 2015- 2016 : MODELISATION COMPTABLE, OPERATIONS COURANTES*,Fifth Edition,Gualino ,2015.

HACHICHA (A) : *CHOIX D'INVESTISSEMENT ET DE FINANCEMENT*, 2013.

HAWAWINI (G), VIALLET (C), *FINANCE FOR EXECUTIVES : MANAGING FOR VALUE CREATION*, Second Edition, Thomson,2001

References

- HOUDAYER (R), *EVALUATION FINANCIERE DES PROJETS*, 2^{ème} édition.
ECONOMICA, Paris, 1999.
- HUTIN (H), *TOUTE LA FINANCE D'ENTREPRISE, EDITION D'ORGANISATION*, Third Edition, France, 2004.
- KOEHL (J), *LES CHOIX D'INVESTISSEMENT*, Dunod, paris, 2003
- KOURDI (J), *EFFECTIVE DECISION MAKING : 10 STEPS TO BETTER DECISION MAKING AND PROBLEM SOLVING*, Marshall Cavendish,2011.
- LASARY, « EVALUATION ET FINANCEMENT DE PROJETS », Ed. Distribution, El Dar El Outhmnia, 2007
- MARSH (C),*BUSINESS AND FINANCIAL MODELS*, Kogan Page, Hong kong ,2013.
- MARUGAN (A), FAUSTO (M),*DECISION MAKING MANAGEMENT: A TUTORIAL AND APPLICATIONS*,Elsevier,2017
- NOMAN (A), EFFICIENCY, FINANCE, AND VARIETIES OF INDUSTRIAL POLICY : GUIDING RESOURCES, LEARNING, AND TECHNOLOGY FOR SUSTAINED GROWTH, Columbia University Press,2016
- ONYIRIUBA (L), *BANK RISK MANAGEMENT IN DEVELOPING ECONOMIES ADDRESSING THE UNIQUE CHALLENGES OF DOMESTIC BANKS THROUGH RISK MANAGEMENT*, Elsevier Edition,United kingdom ,2016
- PARKER (E), *FINANCE IN YOUR OWN BUSINESS*, Bookstorm edition,South Africa 2011
- PIGET (G), *GESTION FINANCIERE DE L'ENTREPRISE*, éd. ECONOMICA, Second Edition, Paris, 2005.
- RICHMAN (L), *SUCCESSFUL PROJECT MANAGEMENT 3RD EDITION*, AMACOM,2011,USA
- RIVET (A), *GESTION FINANCIERE : ANALYSE ET POLITIQUE FINANCIERE DE L'ENTREPRISE*, Edition Ellipses Marketing S. A, Paris, 2003.
- ROWE (S), *PROJECT MANAGEMENT FOR SMALL PROJECTS*, Second Edition,2018.

References

SHERMAN(J), *MERGERS AND ACQUISITIONS FROM A TO Z*, Fourth Edition, AMACAOM,2018

TAVERDET-POPIOLEK (N), *GUIDE DU CHOIX D'INVESTISSEMENT*, Edition Dunod, 2008

VENIMMEN (P), *FINANCE D'ENTREPRISE*, Edition Dalloz, Paris ,2014

VINOD (K), *LEASE FINANCING & HIRE-PURCHASE*, Wadhwa and Company, Nagpur,1991

WU (C), BUYYA (R), *CLOUD DATA CENTERS AND COST MODELING: A COMPLETE GUIDE TO PLANNING, DESIGNING AND BUILDING A CLOUD DATA CENTER*, Elsevier Science, 2015.

YVES (S), *EVALUATION FINANCIERE DES PROJETS (INGENIERIE DES PROJETS ET DECISION D'INVESTISSEMENT)*, Second Edition, paris,2007.

2.Dictionnaire :

MULLER (E), *ANGLAIS DES AFFAIRES*, Foucher,2018

3. Academic papers

AISS (F) et BENNOUCHEN (R), *EVALUATION FINANCIERE D'UN PROJET D'INVESTISSEMENT*, Master thesis, Université de Bejaia, 2016

BALAHOUANE (K), *EVALUATION D'UN PROJET D'INVESTISSEMENT : CAS DE L'EXTENSION DE LA RAFFINERIE DE SUCRE DE CEVITAL SPA*, Université de Bejaia, 2014

GARDES (N), « *FINANCE D'ENTREPRISE* », rapport de stage du 26/06/2006

PRANAKUSUMA (S): *ANALYSIS OF INVESTMENT DECISION MAKING OF A BUDGET HOTEL CASE STUDY*, MAGISTER THESIS IN COMMERCIAL SCIENCES, Indonesian European University ,2016

SOHAIB Masood, *DETERMINANTS OF RETAINED EARNINGS IN PROFITABLE COMPANIES IN INDIA: A COMPARATIVE STUDY OF SELECTED SECTORS*, doctor of Philosoph in Business administration, ALIGARH MUSLIM UNIVERSITY,2013

References

4. Websites

<http://www.accountingnotes.net>

<http://www.investopedia.com>

<http://www.efinancemanagement.com>

Contents

Acknowledgements

List of figures

List of tables

List of abbreviations

Content

GENERAL INTRODUCTION.....A

CHAPTER I: Funding sources of investments

Introduction.....1

Section 01: Funding sources of investments.....2

1.1.Retained earnings.....2

1.1.1. The Purpose of Retained Earnings.....3

1.1.2. The retained earning formula.....3

1.1.3. The net Income impact on the retained earnings.....4

1.1.4. The dividends impact on the retained earnings.....4

1.1.5. Advantages of retained earnings.....4

1.1.6. Disadvantages of Retained Earnings.....5

1.2. Debt financing.....5

1.2.1. Cost of Debt financing.....6

1.2.2. Measuring debt financing7

1.2.3. Debt Financing interaction with Interest Rates.....7

1.3. Share Capital8

1.3.1. Types of Share Capital.....8

1.3.1.1. Authorized Share Capital.....9

1.3.1.2. Issued Share Capital9

1.3.1.3. Share Capital on a Balance Sheet.....10

1.3.1.4. Preference Shares.....10

1.3.1.4.1. Types of Preference Shares.....10

1.3.1.4.1.1. Cumulative and Non-Cumulative.....10

1.3.1.4.1.2. Cumulative and Non-Cumulative.....11

1.3.1.4.1.3. Convertible and Non-Convertible.....11

1.3.1.4.2. Advantages of Preference Shares.....11

1.3.1.4.3. Disadvantages of Preference Shares12

1.4. Lease Finance.....12

1.4.1. Operating leases12

1.4.2. Financial leases	13
1.5. Hire Purchase Finance	13
1.6. Factoring	15
1.6.1. Types of Factoring	15
1.7. Angel Investors	15
section 2: Classification of funding sources	16
2.1. Based on Time Period	16
2.2. Long Term sources of funds	16
2.3. Medium Term sources of funds	16
2.4. Short Term sources of funds	17
2.5. Based on source of generation	18
2.6. Internal sources	18
2.7. External sources	18
Conclusion	19

CHAPTER II: Profitability Evaluation Criteria of a business project

Introduction	21
---------------------------	-----------

Section01: Criteria for evaluating investments in certain futures..... 22

1.1. Static methods (a temporal)	22
1.1.1. The average rate of return (ARR)	22
1.1.1.1. Calculate Average Rate of Return (ARR)	23
1.1.1.2. The average rate of return method is used as a basis for	23
1.1.1.3. Advantages of the average rate of return	23
1.1.1.4. Disadvantages of the average rate of return	23
1.1.2. The payback period (BP)	24
1.1.2.1. Payback Period Formula	24
1.1.2.2. The advantages of the payback period	24
1.1.2.3. The disadvantages of the payback period	25
1.2. Dynamic (temporal) methods	25
1.2.1. Notion of Discounting	25
1.2.1.1. Time Value of Money and Discounting	26
1.2.1.2. Discounting and Risk	26
1.2.2. Net Present Value (NPV)	26
1.2.2.1. The use of Net Present Value (NPV) Analysis	26
1.2.2.2. Advantages of Net Present value (NPV)	27
1.2.2.3. Disadvantages of Net Present value (NPV)	28

1.2.3. Internal Rate of Return (IRR)	29
1.2.3.1. Decision rule.....	29
1.2.3.2. Advantages of IRR.....	29
1.2.3.3. Disadvantages of IRR.....	30
1.2.4. Profitability Index (P.I.)	30
1.2.4.1. Profitability Index Rule.....	30
1.2.4.2. Profitability index (PI) vs net price value (NPV)	31
1.2.4.3. Profitability index vs IRR	31
1.2.4.4. The advantages of P.I	31
1.2.4.5. The disadvantages of P.I	31
1.3. Integrated methods (global criteria)	31
1.3.1. The aggregate net present value (NPVG)	32
1.3.2. Overall internal rate of return (IRRG)	32
1.3.3. Global profitability index (PIG)	33
1.3.4. Advantages and disadvantages of the global criteria are.....	33
Section02: Criteria for evaluating investments in uncertain futures.....	34
2.1. Probable methods	34
2.1.1. The Scenario Method.....	34
2.1.1.1. Generating cases to be used in Scenario Analysis.....	35
2.1.2. The Monte Carlo method	36
2.1.2.1. The Decision Tree Method.....	36
2.2. Non-probable methods	38
2.2.1. The WALD criterion (Maximin)	38
2.2.2. Laplace's criterion.....	38
2.2.3. The Savage criterion (Minimax)	38
2.2.4. The Hurwitz criterion	38
Conclusion	39
 CHAPTER III: Financial Evaluation of a business project	
Introduction	41
Section 01: Case study	42
1.1. Presentation of project	42
1.2. Production capacity	42
1.3. Implementation planning.....	43
1.4. The project parameters.....	43
1.4.1. The total amount of the investment.....	43
1.4.2. Calculation of working capital requirement(WCR).....	43
1.4.3. Financing structure	44

1.4.4. The turnover	46
1.4.5. Estimated annual operating expenses	47
1.4.6. Taxes.....	48
1.4.7. Personnel expenses	48
1.4.8. Depreciation of investments.....	49
1.4.9. Financial expenses.....	49
1.4.10. The income statement	51
1.5. Financial evaluation.....	52
1.5.1. Net present value.....	53
1.5.2. Internal rate of return (IRR)	53
1.5.3. Payback period.....	54
1.5.4. Profitability Index.....	55
Conclusion	56
GENERAL CONCLUSION.....	58
References.....	63