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**FACULTY OF BUSINESS AND ECONOMICS**

**MASTER THESIS**

**“Analysis of Chemo-Pharmaceutical sector in the  
Republic of Macedonia – Economic perspective and  
macro-micro approach”**

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Towards meeting the requirement for further processing of the master thesis, determined by the regulation of the second cycle of studies at the South East European University.

I, Gent Qamili submit the work done so far on the topic: "***Analysis of Chemo-Pharmaceutical sector in the Republic of Macedonia - Economic perspective and macro-micro approach***", under the leadership of *Academic Abdylmenaf Bexheti*, which meets the criteria set by the regulation of this cycle.

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# INTRODUCTION AND OBJECTIVES OF THE STUDY

## 1. Introduction

It has been familiar from old time stories that healing people is one of the most appreciated deeds, being considered helpful, honorable and virtue. This opinion continued, even though we all reading this analysis are 21st's century witnesses of progressive technological prosperity, which it became more than unstoppable.

Previously the doctors made medicine by themselves, with different kinds of herbs, producing them naturally in days. It seems very skeptic, but it is known that those herbs actually helped people.

Nowadays, everything is the same, it is probably the exact same recipe to produce the medicine, but they are produced easier, faster and safer, and this is where the motivation of this analysis lies.

From herbs to machinery that produces in order to save people, testing the production and enhancing it in ways Besides the fact that they earn money out what they sell, companies willing to help, but what they do is something that helps humans to overcome the problems with their health and every human being feels vulnerable when it comes to their health.

The motivation begins with the question whether this small country could succeed to establish stability in the production of the medicine or a stable and fair import of enough drugs for the citizens of this country.

The target group of the analysis is the youngsters of the country. The reason why this target group is being taken into the account is the following young people have grown to live into skepticism of their own governments and the production this country has.

This has risen as issues of the resources they believe are incorrect, but the faulty of this fall upon their ignorance of the numbers that are included in this analysis. The elder group is left aside as a target group, because they do not have a chance to choose which medicine is preferable, they mostly go along with their doctors opinion of what is good.

The numbers you will come across with the analysis below are gathered and synthesized from a broader research that includes the financial statements, crucial financial indicators, and financial opinions in the last 10 years, including some facts from the last pandemics in the year of 2020.

The financial indicators that are needed to fulfill the first hypothesis are the sales, taxes, total revenue and so on, because from them we can learn some things that include the macroeconomics (taxes, sales), but also the microeconomics (the buyers behavior, penetration between some companies in the sector).

By some of the following information about the government's investing decisions, we can come to a conclusion whether this sector is chosen to be helped by the ruling party or it makes obstacles for the Chemo-Pharmaceutical sector's sustainable growth.

## 2. Study objectives

- **Primary Objective:**

To analyze the existing possibilities in the Republic of North Macedonia on sustainable growth of Chemo-Pharmaceutical sector and the potential this is not used for this sector.

- **Secondary Objectives:**

There have been various objectives for this study, the first of which is a detailed analysis of the financial statements of chosen pharmacies.

The second objective, however the most important one or in other word the principle aim of this project is the understanding sustainable growth concerning the economical perspective.

## 3. Research questions

1. Do you think that the chemo-pharmaceutical sector has the potential for economic sustainable growth in North Macedonia?
2. How is the existing economic potential in the lack of political stimulation?
3. The profitability of pharmaceutical companies how do you think is negative or positively affected by financial debts?
4. Can we expect positive growth this year?

## 4. Hypotheses

*In this master thesis I will pretend to show or throw the following hypotheses:*

1. Chemo-pharmaceutical sector has the potential for economic sustainable growth in Republic of Macedonia.
2. The existing economic potential is not used as it should, this could be from the lack of the political stimulation of this sector from the government.
3. Pharmacists in the Republic of Macedonia require work licenses in order to work in pharmacies.
4. The pharmacists' role has gradually shifted from compounding to dispensing medicines, and recently towards patient- centered services based on models of clinical pharmacy and pharmaceutical care.
5. The profitability of pharmaceutical companies is negatively and consistently affected by financial debt ratios
6. Pharmaceutical industry expected to see positive growth this year.

*Results of studies and empirical analysis will show the final result of these hypotheses raised.*



## 5. Study methodology

The total data collection has been studied under two categories.

**Primary data:** The source of primary data is the yield where the researcher has collected fresh hand information or data from primary and secondary sources, i.e. during the preparation of this master thesis information. The primary data in my master thesis provide raw information and first-hand evidence. There we will use statistical data (The information which have already been passed through known as “Documentary data”, Company Annual reports ( *Alkaloid A.D – Company A, Lek Skopje – Company B, Euro-Farm- Company C, Zegin Doo – Company D*) were consulted to collect data relevant to the topic and works of art.

**Secondary Data:** the sources in secondary data will provide the second hand information and commentary from other researches. The secondary data used in my master thesis are some online e articles that are relevant to the topic of this thesis, reviews and academic books. Also the secondary data describe, interpret and synthesize the primary sources.

## 6. Limitations of study

The data obtained in the study are in terms of time span for the period taken in the study the last period. During this time, various researches and analyzes have been used, such as: reports and documents, different literature compared to neighboring countries.

Also, the complete lack of some data conditioned positivity for the application of reports received from pharmacies which we encountered as a case study. This method influences the finding of problems, and addressing in terms of detailing the challenges and overcoming them with elements and comparisons as practical as possible.

This shows that this data can serve as a guide in finding the opportunity to use these studies as qualitative indicators. At the same time, this desertion had some challenges, difficulties and obstacles in our research as there was very little literature about the pharmaceutical sector in the Republic of Macedonia, in micro and macro perspective.

We have decided that our topic should be specified "Analysis of Chemo-Pharmaceutical sector in the Republic of Macedonia - Economic perspective and macro-micro approach". To research the topic in question, we have consulted with many documents, reports, abundant literature about this sector unaffected so far by other researchers.

Another difficulty during the research of our paper was the analysis of financial reports, some of which we had the opportunity to find easier and some of which we had more difficult. This is the very scientific character of a paper, and we have considered that all the data we will collect online due to the pandemic.

To analyze them, to process them properly and to present them all in a very critical way, dealing with the topic in question.

Limitations related to this research are given below:

- 1. The research is limited only to the study of the chemo-pharmaceutical sector in the Republic of Northern Macedonia, in economic terms.*
- 2. It is also limited to micro and macro study only.*

## **7. Importance of the study**

This paper will have great importance and impact on the economic aspect of pharmaceutical industry because numbers of researches that at the moment exist on this sector are deficit or don't exist at all. Taking in consideration the importance of this sector for the economy of the country can be said definitively we are in a lack of researches when it comes to this sector.

With this paper I will try and make an in-depth analysis of the above mentioned sector, which clearly will explain the problems or gaps that this sector is having at economic aspect, information such: how this industry function operate, expenditures of government in this industry, costs of the R&D about this industry, possibilities, advantages - disadvantages of the companies in this industry compared to any other industries, threats of the industry, etc.

This project will help the government and also it will be of a great help to the companies that operate in it as this research will equip them will carefully collected data that will help them on decision making without having to conduct any other research.

The good side of this project is that it aims to help and enable the foreign and country investors to have a clear picture of this industry and to help them while deciding on whether or not to invest because they will find information of two different aspects: theoretical (how should be) and practical (how it is).

# **CHAPTER 1: THEORITICAL APPROACH OF CHEMO- PHARMACEUTICAL SECTOR**

## **I.1. Characteristic of chemo – pharmaceutical sector**

According to the group of authors (McGuire, John L.; Hasskarl, Horst; Bode, Gerd; Klingmann, Ingrid; Zahn, Manuel, 2007), The pharmaceutical industry is the sector in life sciences engaged in the production and sale of medicines, such as pills, creams, powders, and liquids.

The sector can be distinguished in two areas: on the one hand, chemistry specialists who are producing the active substances of a drug and on the other hand, specialists who ensure a drug are shaped the right way.

According to (Rubin Zarevski, 2011), Pharmacoeconomics can be regarded as a branch of health economics which deals with identifying, measuring, and comparing the costs and consequences of pharmaceutical products and services.

It helps in forming an economic relationship which combines the drug research, its production and distribution, storage, pricing, and further use by the people. Furthermore, a lot of work is being done on the discovery and development of new drugs and the improvement of existing drugs (QTC, 2017).

The main goal of the life sciences industry is to improve the quality of life, products, and/or processes. For pharmaceuticals, the main challenge is to develop new medicines that prevent or cure currently incurable diseases.

The production of medicines is subject to several strict laws and regulations that relate to safety, efficacy, patents, hygiene, testing, and marketing of these drugs. All medicines must be registered by the registration authorities.

These authorities determine whether the medicine is effective and safe for society by analyzing the drug potential in different research phases. If a drug has been approved, it can be marketed and the manufacturer and/or importers will supply the drug to wholesalers who are responsible for the distribution to pharmacies, supermarkets, and drug stores.

Also according to (Gennaro, A., 1990) there are ongoing developments in the pharmaceutical industry. One of the trends is that drug companies merge to specialize in a particular sub-market. The merge of these companies makes their position on the market stronger and makes it possible to fund the high costs of research. Another trend in the pharmaceutical industry is digitalization.

Approximately 40% of all healthcare consumers are searching online for information related to healthcare, symptoms, and treatments. Besides, social media is becoming more and more important. 23% of the healthcare consumers are using social media to look up information about health issues.

As a result, file documents, processes, and information must all be implemented online, which causes an increase in employment opportunities. The pharmaceutical industry is an important component of health care systems throughout the world; it is comprised of many public and private organizations that discover, develop, manufacture and market medicines for human and animal health. (Gennaro, A., 1990).

The pharmaceutical industry is based primarily upon the scientific research and development (QTC, 2017) of medicines that prevent or treat diseases and disorders. Drug substances exhibit a wide range of pharmacological activity and toxicological properties. (Hardman, JA Gilman and L Limbird, 1996).

Modern scientific and technological advances are accelerating the discovery and development of innovative pharmaceuticals with improved therapeutic activity and reduced side effects. Molecular biologists, medicinal chemists and pharmacists are improving the benefits of drugs through increased potency and specificity.

These advances create new concerns for protecting the health and safety of workers within the pharmaceutical industry. (Agius, R, 1989). Many dynamic scientific, social and economic factors affect the pharmaceutical industry.

Some pharmaceutical companies operate in both national and multinational markets. Therefore, their activities are subject to legislation, regulation and policies relating to drug development and approval, manufacturing and quality control, marketing and sales. (Spilker, B, 1994)

Academic, government and industry scientists, practicing physicians and pharmacists, as well as the public, influence the pharmaceutical industry. Health care providers (e.g., physicians, dentists, nurses, pharmacists and veterinarians) in hospitals, clinics, pharmacies and private practice may prescribe drugs or recommend how they should be dispensed.

Government regulations and health care policies on pharmaceuticals are influenced by the public, advocacy groups and private interests. These complex factors interact to influence the discovery and development, manufacturing, marketing and sales of drugs.

The main objective in this master thesis is to analyze the **Chemo-Pharmaceutical sector in the Republic of North Macedonia – Economic perspective and macro-micro approach**. North Macedonia is a small country in the middle of the Balkan Peninsula, few people knew much about this country.

After North Macedonia became independent, the health care shifted from a decentralized to centralized system. According to (Pamela Mason, 2000), primary care is provided by both general practitioners and specialist doctors through a network of organizations, known as ambulant as, health houses and polyclinic centers.

This structure varies slightly between rural and urban areas and with the size of the town. In rural areas, one primary care physician provides care for every individual in the population allocated to him or her.

In urban areas, however, a primary care physician takes care of individuals from one population group, including infants and young children up to the age of six, schoolchildren, women and employees.

A general physician takes care of everyone else. This means that primary care physicians tend to take care of one individual in a family and not the whole family. Secondary care is provided by hospitals and tertiary care.

Lack of funds has also created a shortage of drugs in the state system. Medicines are reimbursed by the health insurance fund, although patients (with some exemptions) pay 20 per cent of the cost.

There is a list of reimbursable drugs, and for each drug, the ministry of health asks suppliers both inside and outside Macedonia to quote a price. The ministry then selects a supplier. In Macedonia itself, the pharmaceutical market is small and there is little competition with drug prices being about four times as high as the European Union average, but the ministry's tendering system for drug supplies should eventually help to bring national prices down. (Pamela Mason, 2000)

## **I.2. Role and impact of chemo – pharmaceutical sector in economic growth**

The pharmaceutical industry defies simple definition. Both geographic and product boundaries of the industry are elusive. It is a truly global industry in which the member companies have substantial operations in many different countries. (Anurag Sharma, 1999)

The small size of product units makes transportation relatively small part of the total delivered cost, and, as a result, drugs conceived and produced in one location can be easily made available in virtually any other part of the world.

Because the discovery, development, and manufacturing operations of pharmaceutical companies are typically dispersed across many locations worldwide, it is often difficult if not impossible to determine where particular drugs originated.

It is, therefore, perhaps meaningless to put geographical bounds on the pharmaceutical industry as a whole. Moreover, the products that the industry produces range from ordinary vitamins to very sophisticated life-saving drugs developed by highly talented scientists working in state-of-the-art research laboratories.

Defining where the industry begins and where it ends in terms of the products is, therefore, at least partly a matter of taste – and, in the end, a bit arbitrary. While some of the core drug products can be classified as clearly having medicinal value, many others evade easy classification because of their appearance as drugs, for instance, but serving cosmetic ends, or vice versa.

The pharmaceutical industry operates under unusual characteristics, both in its structure and in its business transactions, that are little known outside the industry but which substantially affect the process of bringing new pharmaceuticals to world markets.

As mentioned before, the development of a new pharmaceutical product is very time consuming, extremely costly and risky, with a relatively little chance of a successful outcome. (Taylor, D., 2015).

The effect of pharmaceutical industry production and/or trade on economic growth can be analyzed indirectly through the life expectancy variable and its relationship with economic growth in the literature.

According to this approach, advances in pharmaceutical industry have a positive impact on life expectancy. And many studies in the literature indicate a positive correlation between the prolonged life expectancy and economic growth. (Barro, R, 1996)

Another link of economic growth and pharmaceutical industry is the one via innovations. (Lichtenberg, F. R., 1998) Analyzed the relationship between pharmaceutical innovations and economic growth for the periods 1970-1980 and 1980-1991 in USA.

The findings of the study suggest a positive effect of pharmaceutical innovation on lifetime income, which means a significant contribution to economic growth. On the other hand, the relationship between pharmaceutical industry trade and GDP has been studied mainly with Gravity Model in the literature.

(Blanc, L, 2015) Analyzed the determinants of the extra-EU exports of the pharmaceutical products of the EU-25 countries for the period 2004-2011 using the Gravity Model of international trade.

According to this study, GDPs of trading partner countries of the exporting EU countries have positive coefficients and are statistically significant. The geographical distance between EU and importing countries has a negative coefficient.

On the other hand, the quality of infrastructure, the size of healthcare sector of the importing country and the level of intellectual property rights in the importing country variables all have positive coefficients and are statistically significant.

GDP of the exporting country was not included in this analysis. Thus, the relationship between pharmaceutical industry exports and economic growth of the exporting country was not analyzed. Other than that, the variables of the Gravity Model revealed the expected results.

(Boring, A, 2010) Also used Gravity Model to find out whether foreign patent protection increased the United States' trade of pharmaceuticals. The US exports and imports of pharmaceuticals for the period 1993-2007 were analyzed.

The results indicate that patent protection has not been a strong determinant of the US exports and imports of pharmaceuticals. However, GDPs of importing countries have been positively correlated with the increases in exports and imports of the US pharmaceutical industry.

(Wilkman, M, 2012) Analyzed the determinants of the Swedish pharmaceutical exports for 1995-2010 periods. The results of this study indicate that both GDP and GDP per capita of the importing countries have been positively correlated with the increases in Swedish pharmaceutical exports.

All of these three studies mentioned above employed Gravity Model of international trade to assess the determinants of pharmaceutical industry trade for different countries. However, they all neglected to include the GDP of the exporting country variable to their models although it is one of the main variables of the Gravity Model.

In other words, the effect of the economic growth of the importing countries on the pharmaceutical exports of the exporting country has been analyzed but the relationship between the economic growth of the exporting countries and their own pharmaceutical industry trade has not been analyzed.

To the extent of our literature survey, this remains a huge void in both pharmaceutical industry studies and economic growth literature.

## **CHAPTER 2: COMPARATIVE ANALYSIS**

### **II.1. Chemo - pharmaceutical sector in developed countries**

The pharmaceutical industry has a circa (Global pharma sales in 2000 up 10%, 2001) \$US210 billion turnover employing many thousands of persons to synthesize, test, select and develop therapeutic compounds for product registration and subsequent prescription by doctors for use by patients.

The industry is a business; it was not established as a philanthropic body, although it does conduct such activities. No article published in the scientific press in the last 10 years reviews the various areas of interest common to the World Health Organization (WHO) and the pharmaceutical industry.

Despite a vast amount of information in the public domain, the policies expound the views only of the bodies they represent rather than comparing differing views. An understanding of the factors which affect the interaction between these organization's as well as the organizational structures and the actual areas of intersecting interest, may help to find ways for the industry to assist the WHO in its endeavors in developing countries.

In developing countries, the effect of globalization on the pharmaceutical sector has resulted in a decrease in exportation and domestic production, accompanied by an increase in importation of pharmaceuticals and a rise in prices and expenditures.

As an example of a developing country, Turkey has been facing the long-standing and increasing pressure of global regulations placed on its pharmaceutical sector. This has led to an increasing dependency on multinational companies and a gradual deterioration of an already weakened domestic pharmaceutical sector. (Karen Lashman Hall, 1986)

The importance of pharmaceuticals as-a health technology is well documented through developed and developing nations.

While health status in the now industrialized countries already had improved significantly before the discovery of modern pharmaceuticals, due mainly to widespread i=provident in education, water and sanitation and nutrition, the introduction of key drugs and vaccines accelerated reductions in morbidity and mortality, particularly from infectious and parasitic diseases, thus directly contributing to the demographic and epidemiologic transition of these countries.

Similarly where effectively applied in the developing countries, existing pharmaceuticals have contributed to declines in morbidity, mortality, and fertility. The role of pharmaceuticals and medical technology in improving health in developing countries stands in contrast to the historical experience of the developed countries.



Historically, health in currently developed countries improved largely due to higher incomes and consequent improvements in nutrition, sanitation and water supplies. (Fogel, Robert W., 1986).The market for pharmaceuticals in developing countries differs in several ways from that in the developed world.

| <b>Region</b>                     | <b>% of the Market</b> |
|-----------------------------------|------------------------|
| <i>United States</i>              | 39.6 %                 |
| <i>Europe</i>                     | 26.1                   |
| <i>Japan</i>                      | 15.4                   |
| <i>Latin America</i>              | 7.5                    |
| <i>Southeast Asia &amp; China</i> | 7.0                    |
| <i>Canada</i>                     | 1.9                    |
| <i>Africa</i>                     | 1.0                    |

**Table 1. World Pharmaceutical Market, Sales by Region, 1998**

Source: PhRMA 2000

The market for pharmaceuticals in the poorest countries is tiny. Connecticut spends more on health than the 38 low-income countries of sub-Saharan Africa combine (World Health Organization, 2001).

In 1998, U.S. public and private health spending constituted 13 percent of its almost \$32,000 per capita income, for a total of more than \$4,000 per person. In contrast, low-income sub-Saharan African nations spent only 6 percent of their average \$300 per capita GDP on health, or around \$18 per person (World Bank, 2001b), though developing countries spend a higher percentage of their health budgets on pharmaceuticals than do developed countries.

Drug developers often do not even bother to take out patents in small, poor countries Middle-income country markets are small, but comprise a significant and growing source of revenue for pharmaceutical.

The Pharmaceutical Research and Manufacturers of America (PhRMA) estimate that while only 1 percent of their market is in Africa, including middle-income countries such as South Africa, 7 percent is in Southeast Asia and China, and 7.5 percent is in Latin America (PhRMA, 2000), as shown in Table 1.

Developing countries face a significantly different disease environment than developed countries due to both their poverty and their geography.

## II.2. Chemo - pharmaceutical sector in developing countries

It would be relatively easy to use the article of (A.M Breckkenridge) as a vehicle to attack irresponsible attitudes and actions of the pharmaceutical industry in developing countries and examples could certainly be cited to make such points. (Taylor, D., 2015) makes four important points when considering the social and economic factors which must be taken into account in any such discussion.

While these phases of health development have proceeded in a mainly sequential and ordered fashion in Western Europe, following other social and political trends, one cannot see evidence of such a pattern of development in most developing countries.

Too frequently curative drugs are introduced into a society before an improvement of the environment; the rich in the developing countries may acquire the very new antiviral drugs at a time when the poor may not even have clean water. Such anomalies are legion and clearly lead to difficulties.

In a developed country, the pharmaceutical industry is part of a balanced power structure in which the government, academia, the medical profession and consumer groups play a role in drug usage. Too often in developing countries these balancing influences do not exist and thus industry can do as it wishes in terms of pharmaceutical promotion.

Multinational companies have a special responsibility to encourage European standards of drug promotion to the Third World; the International Federation of the Pharmaceutical Manufacturers Association produced in 1981 their first code of international marketing practice. How strictly this is being adhered to is uncertain and many are cynical about its effects. (Miguel, Edward and Michael Kremer, 2002)

Developing countries often simply follow the approval decisions of developed countries rather than conducting their own risk-benefit calculations. While this practice may be appropriate in some cases, it may also block the adoption of needed drugs and vaccines.

For example, rotavirus kills three-quarters of a million children each year in developing countries, but it is a minor health nuisance in the United States, causing more than three million cases of childhood diarrhea each year, but few deaths. (Michael Kremer, 2002).

Some of the characteristics of the pharmaceutical industry that differentiate it from other industries are particularly relevant for developing countries.

- *First, the pharmaceutical industry has high fixed R&D costs and low marginal costs of production.*
- *Second, the industry is exceptional in that patents rather than first mover advantages or other sources of monopoly power provide the key protection for innovators.*
- *Third, pharmaceutical regulation and prescription requirements in developed countries facilitate price discrimination across countries by making resale across*

*national borders easier to block. As a result, price differentials between countries are often large.* (Michael Kremer, 2002)

Clearly, the pharmaceutical market in developing countries is rife with market and government failures. Pharmaceutical use is sometimes suboptimal due to pricing above marginal cost and positive treatment externalities for infectious diseases; sometimes too great due to the failure of consumers to take into account externalities from drug resistance; and sometimes simply inappropriate due to information asymmetries between health care providers and their patients.

Drug procurement is often inefficient and corrupt, and inappropriate regulation can hinder access. In addition, health care workers are politically powerful relative to patients. However, the most severe distortions in developing country pharmaceutical markets probably involve dynamic issues.

According to (Michael Kremer, 2002) Pharmaceutical firms are reluctant to invest in R&D on the diseases that primarily affect developing countries not only because the poverty of the potential users reduces their willingness to pay, but also because the potential revenue from product sales is far smaller than the sum of customers' potential willingness to pay due to the lack of intellectual property protection and the tendency for governments to force prices down after firms have sunk their research and development costs.

The under provision of R&D on problems facing the poor, even relative to their incomes, implies that a redirection of foreign assistance from private goods, such as food, or even public goods, such as roads, to the international public good of R&D on health problems of the poor could make the poor better-off.

The pharmaceutical sector in transition had a particular advantage in those countries of central and eastern European countries that exported to the Soviet Union, which also gave the new Russia and Commonwealth of Independent States (CIS) something of an advantage in established markets. (Pharma International, 2001)

The Hungarian and Slovenian pharmaceutical firms in particular have gained from copying processes from patent holders and/or operating under licenses, and they have come to dominate Russia's current import market, as they did the Soviet trade in the past. Regional giants are emerging, as, for example; the take-over by the Croatian firm, Pliva, which early formed a western partnership, of Czech manufacturing.

These countries, entrants to the EU, now benefit from participating in the European pharmaceutical market, estimated to be growing at an annual average of 4 per cent over 1999- 2004; the Eastern European market, as a sub-sector, growing even faster than these highly developed European markets. (Pharma International, 2001)

## **CHAPTER 3: CHEMO -PHARMACEUTICAL SECTOR IN REPUBLIC OF NORTH MACEDONIA**

The pharmaceutical and healthcare industries require unique and fast services in changing logistics. As part of wider reforms within the pharmaceutical sector, the pharmaceutical care concept has been introduced in the Republic of Macedonia.

This thesis provides on current opportunities and challenges which pharmacy practice face in Macedonia. The emphasis is on three prerequisites for the implementation of pharmaceutical care including: organization of pharmaceutical services, legislation, and professional training.

According to (Verica Ivanovska , 2006) argues that Macedonia possesses a favorable pharmacy workforce, solid legal basis and supportive structures of healthcare services in order to implement pharmaceutical care.

Implementing pharmaceutical care has not been without its challenges, such as: lack of clinical skills, inadequate continuing education and the current remuneration structure for pharmacy services.

While Good Pharmacy Practice (GPP) Guidelines have been developed, wider professional debate and practical steps have not been undertaken to promote the concept of pharmaceutical care nationally. Therefore, an integrated national approach to develop strategy, standards and tools for patient-oriented pharmaceutical practice has to be formulated.

In addition, there is a need to undertake more comprehensive analysis of current pharmacy practice, to explore the awareness and willingness of the pharmacists to embrace pharmaceutical care practices, and to identify the opportunities and barriers for implementation of pharmacy practice.

The concept of Pharmaceutical Care has recently been introduced in the Republic of Macedonia. Pharmacists still face the challenge of embracing this concept in their daily practice, even though the country possesses a favorable pharmacy workforce, solid legal basis and supportive organization of health care services. (Verica Ivanovska , 2006)

This viewpoint highlights the need for clear and integrated national approach to develop a strategy for patient-oriented pharmaceutical care. Analysis of current pharmacy practices and identification of opportunities and barriers for pharmaceutical care implementation need further attention, if Macedonia is to advance its pharmacy practice activities and thereby improve patient care.

Following independence in 1991, the Republic of Macedonia pharmaceutical sector has undergone numerous reforms. These reforms include the privatization of state-owned pharmacies, an increase in numbers of new community pharmacies and uneven territorial distribution of pharmacies.

As in other countries undergoing similar reforms, this wide spread liberalization has led pharmacy to be increasingly seen as part of the commercial sector and less part of the professional system within healthcare.

The role of community pharmacists is reflected in the dispensing of medicines and the provision of information to patients on the proper use of medicines, while public health activity does not feature. Hospital pharmacists only provide and internally distribute medicines from central pharmacies and have no access to and little interactions with patient care teams in the hospital wards.

Demand globally is growing due to various global factors affecting daily life. General growth conditions in transition countries, as in the developing world, have been favorable for the expansion of trade and competitiveness globally over past ten years.

The share of goods imports coming from developing and transition countries increased from nearly 27 per cent in 1989 to just over 40 per cent in 2001. Real GNI per capita provides a rough indication of how much progress has been made in managing technological and organizational change.

The pharmacists' role has gradually shifted from compounding to dispensing medicines, and recently towards patient centered services based on models of clinical pharmacy and pharmaceutical care. The potential barriers for implementing pharmaceutical care in practice have been classified into four categories: education, skills, resources and environment.

Other barriers include: deficient clinical knowledge and communication skills, insufficient time and inappropriate space, absence of a recognized reimbursement system, lack of adequate drug information resources, poor relationships with doctors and lack of access to patient health records. The pharmaceutical care concept has been recently introduced in the Republic of Macedonia, as part of wider reforms within the pharmaceutical sector. (Macedonia, 2011)

This article seeks to discuss current opportunities and challenges which the pharmacy profession faces when implementing pharmaceutical practice in Macedonia. The Macedonian pharmaceutical sector's regulation was harmonized with the EU legislation in 2007. The Law on Medicinal Products and Medical Devices was revised and a number of by-laws were passed.

In the current Macedonian legislation, pharmacy services and pharmacists' roles are still mostly defined from more of a product-oriented view and less frequently from a patient-care perspective.

For instance, the Law on Health Care from 1997 (article 118) describes pharmacies as product-oriented premises where pharmaceutical activities comprise of acquisition, custody, storage, dispensing of medicines, analysis and quality control of medicines, preparation of magisterial formula and galenic medicines, acquisition and dispensing of children items, dietary products, orthopedic aids and medical equipment, including only instructions on use of dispensed medicines as a pharmaceutical care component. (Parliament of The Republic of Macedonia, 2011)

Unlike some developed countries, there is no special pharmacy law that regulates the practice of pharmacy and the scope of pharmacists' activities. Instead, it is the Law on Medicinal Products and Medicinal Devices from 2007 (articles 81, 82) that outlines details on the activities related to medicines retailing within pharmacies.

Unlike some developed countries, there is no special pharmacy law that regulates the practice of pharmacy and the scope of pharmacists' activities. Instead, it is the Law on Medicinal Products and Medicinal Devices from 2007 (articles 81, 82) that outlines details on the activities related to medicines retailing within pharmacies.<sup>1</sup>

This Act considers pharmacies to be legal entities where purchase, storage, keeping and dispensing of medicines are undertaken. It is very encouraging that this law creates new opportunity for pharmacists by endorsing the need to introduce quality systems and to organize work process according to the principles of good pharmacy practice.<sup>2</sup>

In response, the Guidelines for the Principles for Good Pharmacy Practice were developed in 2009<sup>3</sup>. This thesis provides directions for the evolution of pharmaceutical activities into a pharmaceutical care concept. The guideline clearly places improved patient health as an ultimate objective of pharmaceutical care activity.

The GPP guidelines define four core activities of pharmacists:

- 1) Public health functions related to health promotion and disease prevention
- 2) Supply of medicines and medical products of good quality as well as provision of relevant patient instructions and advice on medicines use
- 3) Self-medication activities and related patient advice and
- 4) Pharmacist contribution to rational prescribing and appropriate use of medicine.<sup>4</sup>

It is not very easy to come to a conclusion whether a sector could have prosperity and sustainability. This conclusion depends on numerous facts, some of which cannot be predicted.

The non-predictive things are some government decisions, willingly or not, but mostly willingly, governments can diminish the usage of a sector, as we previously explained how a sector is being constructed.

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<sup>1</sup> Official Gazette of the Republic of Macedonia 106/2007; 88/2010. Skopje, the Republic of Macedonia : Parliament of the Republic of Macedonia, Law on Medicinal Products and Medical Devices; 2010. <http://www.reglek.com.mk/dokumentacija.php>

<sup>2</sup> Official Gazette of the Republic of Macedonia 106/2007; 88/2010. Skopje, the Republic of Macedonia : Parliament of the Republic of Macedonia, Law on Medicinal Products and Medical Devices; 2010. <http://www.reglek.com.mk/dokumentacija.php>

<sup>3</sup> (In Macedonian) Official Gazette of the Republic of Macedonia 44/09. Skopje, Republic of Macedonia: Ministry of Health of The Republic of Macedonia; 2009. Guidelines for the Principles for Good Pharmacy Practice. <http://www.reglek.com.mk/dokumentacija.php>.

<sup>4</sup> (In Macedonian) Official Gazette of the Republic of Macedonia 44/09. Skopje, Republic of Macedonia: Ministry of Health of The Republic of Macedonia; 2009. Guidelines for the Principles for Good Pharmacy Practice. <http://www.reglek.com.mk/dokumentacija.php>.

Secondly, the predictive things are various numbers based on how they have gone up and down previously and it is helpful to foresee the company's and sector's movement in the future, but it would still not be the most accurate, it can still vary.

In the text further are analyzed some numbers which are considered crucial in order to come to a conclusion such as this one. Before we continue with the indicators needed for the analysis, an assumption has to be made.

On the grounds of the Republic of North Macedonia, there are few relevant companies, which construct this sector as: *Zegin D.O.O*, *Eurofarm Lek Skopje*, *Alkaloid A.D*, but one of them is the leading, most known and most trusted, as in matter of fact most likely incorporated in the country's order.

The leader among these companies is Alkaloid AD – Skopje and that is the reason why some information is taken just from this company. By this it is meant, that the assumption of the sector would be on the public numbers Alkaloid A.D has and some other information, but this will be all indicated along the analysis.

### **III.1. Alkaloid A.D. Skopje**

The data used in this analysis is taken after the last audited financial statement has been posted on the web-site of Alkaloid AD - Skopje. The data used is in the period of 2008-2019, as it is said that the business cycle can be enclosed.

The indicators at this stage of going further in the topic are:

- 1) *Sales*;
- 2) *Costs*;
- 3) *Gross profit*;
- 4) *Taxes*;

The meaning of the indicator and the reason why they are chosen as key indicators is well through their own definition. The sales, in a basic non-formal way of defining them, are the activities of the wholesale and the goal of the activities is gathering profit at the end of the process.

But the sales are understood under two different circumstances. First of them is marketing. Sales in aspects of marketing are the most effective tool in some phases of the process of buying, especially in building the buyers preferences and actions.

Here also should stand the building of a brand, such as the one Alkaloid enjoys. The sales in the marketing process include personal interaction between two or more persons that makes an opportunity to form an opinion about the necessities of the buyers.

In the chemo-pharmaceutical sector, the marketing approach is not that perspective in the means of sales. This happens because of the fact that the medicine that the chemo-pharmaceutical sector has in its primary activity are not something the marketing has to persuade the buyers to have them so the company would have profit.

It is their necessity, so they probably would just have a receipt for what they need to get from the drug store and the seller would not have to have special sales tools in order to get them buy anything.

The conclusion of the above mentioned is already partly explained with the definition of the demand. The numbers below clearly make an assumption that it is not so common in this sector to use the sales tool in marketing so the costumers would buy the products the company offers, the just demand it.

This kind of demand leads us to a direct conclusion that this sector will always have a continuous and not ending stability. The second circumstance of the sales is the accounting, which connects all the information from the above-mentioned tools. The accounting helps to aggregate the numbers so the prosperity of the company would be familiar as well as the direction of where the company is headed.

The most important thing of a company's existence is only known by this side of the sales, if the sale numbers are going continuously up or at least they are continuously in a positive even stable line, the things are going well by definition.

With accrual accounting, revenue is recorded as sales if the goods or services have been delivered to the customer. In cash accounting, the revenue is only recorded if the money has actually been received for the goods or services delivered. Today, the accrual is more common than the other.

So, at this very point, let us agree on one thing only, the sales and the revenue in the accounting, not defining which one, because that's not a matter of speaking, but it is once again the income of the goods that got out of the store and got in the hands of the costumer.

The sales are important in accounting, especially in this part here, because the sales show how much of the goods and services that have been produced go in the hands of the costumers in the same fiscal year and for the goods and services produced.

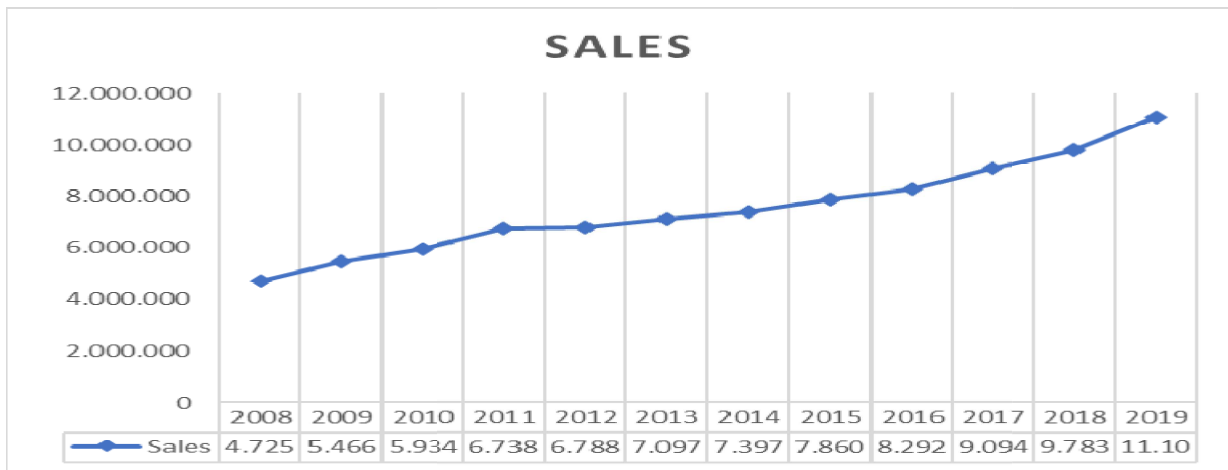
In accounting after the sales are being aggregated in numbers, the next step is to deduct the costs that have been made in order those sold goods to be produced.

To make a conclusion without taking deeper explanation of the micro ratios within this sector might be considered blank, but at the closure of the sales part it is inevitable to conclude that Alkaloid as a leader in North Macedonia has prosperity and maintains its work as it seems that the continuous growth of the sales would maintain in the future. Still, it is very easy to make an assumption like this one.

The absolute number is still just a number and it might seem irrelevant without the process hidden behind. This leads to the costs that are made to make the products, which are sold and constructed the sales.

- The costs are planned to be analyzed further.
- Below are shown the sales in absolute number and on a table as well.





**Graph nr.1 Sales Alkaloid**

To get a solid micro approach of how the sector works we must answer the costs the leader of the sector has in order to produce the medicine. In a sector like this one, where production is included, the costs go mostly in the production of the products the company sells.

They are defined as inevitable, because without them there would not be any production and any sales as well. They are the first to be done in a process of the company, but they come second in an analysis because they are smaller than the sales.

The costs have to be deducted from the sales of the year in order to the gross profit to be familiar; the costs of production can be found vice-versa of the gross profit formula. Firstly, why is actually the costs analysis so important?

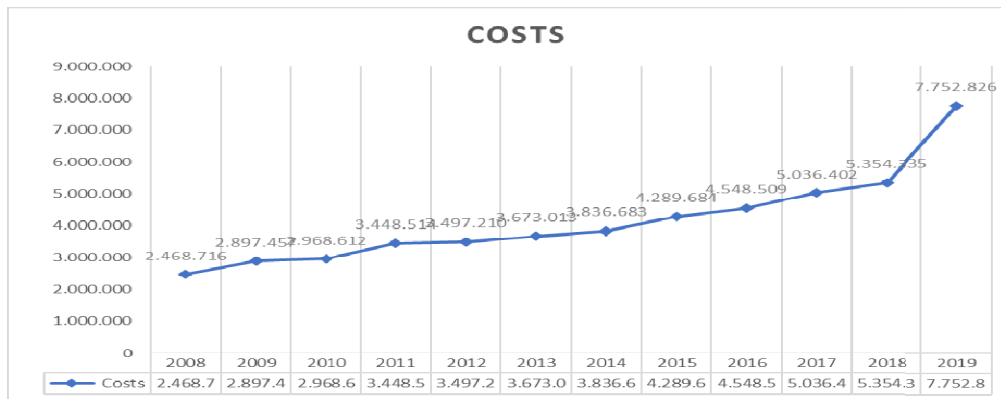
A common answer to this question would be, so the company would have more profit. That is a reasonable answer, but this sector has a crucial meaning in the country.

The costs must be very well analyzed (still in this analysis it is impossible to use internal data). The future of a company, especially Alkaloid AD – Skopje depends on reports like the ones about costs, because the linked costs, done without purpose to be got back in sales or revenue, are lost.

Another deal is the following, a leader as this one, has to be sure of the resources that they provide to make production are bought by a fair price for the quality the resource used offers, otherwise if the costs get over the sales and revenue of the year, the profit that it was meant to be for invested in further researches so the medicine would be with bigger quality than before.

In the analysis is hidden much more than the above mentioned, but the details will go after the numbers. A closer look to the movement of the costs can be seen on the graphics below. Without making deeper effort in discussing the following, we notice that the costs have a growth tendency.

This fact at first leads towards negative assumptions, but the reality is that the costs are not always bad conclusion. They might be bad for a company if the go over the revenue and the company might not have a profit, but still it is very reasonable to conclude negative when an image



**Graph nr.2 Costs Alkaloid**

In the text above it is already mentioned that the costs analysis is very important, so here are the possible reasons why the costs are going up:

1) *It is more than obvious that the sales have almost the same tendency to grow, so the growth tendency means that the costs are due to more materials needed so the medicine can be produced. This is a positive reaction to the positive growth of the production, which has improved its volume positively and more materials are needed. This is the positive matter of the cost growth.*

The conclusion of this is that is not the material that got more expensive and it might in the future with that behavior go over the sale and on this point the sector has a green light.

2) *In the costs are included important components other than the material needed. Here are the costs salaries. If the government decides the wages to be bigger than the ones, they were earlier it might occur a problem for some companies.*

It is familiar that the minimum wage in this country is incomparable to the rest of the European countries. The companies in the Republic of North Macedonia, besides doing great at the end of the fiscal year, still give the minimum wage to the employees.

This is a common thing for this sector as well, because the managers and the people that own companies want to have lower costs as much as they can, but they need the employees, so the pay them much less than they should.

It is inappropriate information, the inside context of the salaries in each of the companies that are in this sector, it to be publicly pointed out, so this analysis will go with only what is seen publicly.

Recently, there has been some interesting news about the leader in the sector, by which the analysis is mostly accorded to. As the end of every quarter, Alkaloid reports about the accomplishments they have done. So, according to the latest report, posted on the web site on 30.10.2019, in the period January 2019 till the end of September 2019 there have been 127 new employments. This number is solid and opens up the way into the conclusion for the rest of the costs a company has.

If a company has so many employments and still, they have not gone over the point so there would be a negative profit, it means the company has widened. The number of employments assures that the sector is going well since they do not fire them, but they do the opposite.

This only means that the sector has the potential for the sustainable growth as the analysis is hoped to prove. The gross profit comes after the costs for a reason. The gross profit is calculated by subtracting total cost of goods produced from the sales.

But what it means and why is it so important?

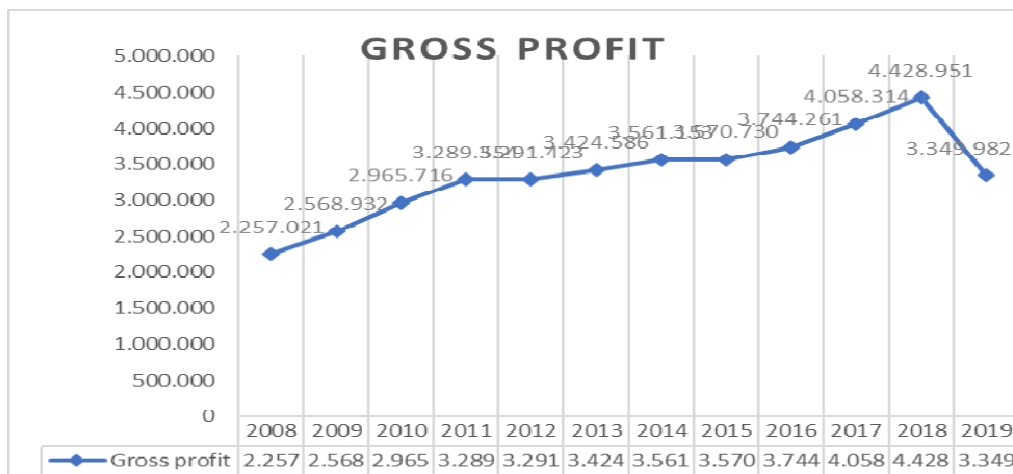
Alkaloid is a company of production medicine. Above it is mentioned why the costs are so important and here is the final explanation of them as well, because the gross profit goes in the calculation of the profit after the costs are deducted from the sales of the year. Gross profit gives the company's efficiency, meaning the labor and supplies usage in producing goods or services.

This considers the variable costs, as the following:

1. *The labor (the direct labor)*
2. *The materials*
3. *Other production costs (as depreciation etc.)*

The way it is calculated is by the following:

By definition some costs go after the gross profit in the income statement. The above-mentioned labor includes only the ones that are employees that are directly connected to the production process.



**Graph nr.3 Gross Profit Alkaloid**

But this is a production company, so most of the employments that are already mentioned are probably directly connected to the production of the medicine as it is obvious from the graphics and tables in the sales section, that the sales have a growth tendency which means that more employees are needed and the direct labor will grow as a cost as well.

The gross profit, also called gross income is important because it shows how a company goes through the costs the company has directly with the production. On the graphic below we see that the gross profit has a growth tendency as well as the sales and the costs, but this is not a bad sign for the leader in the sector analyzed.

What here is actually important?

Gross profit turns negative when the costs of production, which are deducted so the gross profit would be given, go over the sales. This negativity is an indication of a company's inability to control costs of production and a leader as this one would drive down the whole sector.

It seems that Alkaloid has more or less the same tendency over the years for this ratio. With direct costs as this company has it is close to the half of the efficiency.

On the tables and graphic in this section it is inevitable to conclude that the company has a healthy management that knows how to deal with the costs of the materials and the direct labor in the production.

It is not only the demand of the medicine that builds the trust the costumers have in the leader of this sector, it is the way they manage to have profit as they have at the end, as they re-invest it in development in the company.

Gains or losses arising from changes in the fair value of the available-for-sale financial assets are presented in the equity and statement of comprehensive income, except for impairment losses, interest calculated using the effective interest method and foreign exchange gains and losses on monetary assets, which are recognized in profit or loss.

When securities classified as available-for-sale are sold, the accumulated fair value adjustments recognized in equity are included in the income statement. Dividends on available-for-sale equity instruments are recognized in the income statement when the Company's right to receive payments is established.

The fair values of quoted investments are based on last traded prices on the Macedonian stock exchange. Investments in equity instruments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured are recognized at cost, less impairment.

The Company assesses at each balance sheet date whether there is objective evidence that a financial asset is impaired. In the case of equity securities classified as available-for-sale, a significant or prolonged decline in the fair value of the security below its cost is considered an indicator that the securities are impaired.

If any such evidence exists for available-for-sale financial assets, the cumulative loss - measured as the difference between the acquisition cost and the current fair value, less any impairment loss on that financial asset previously recognized in profit or loss - is removed from equity and recognized in the income statement.

The Company has an obligation to pay compensations to the employees who are classified as "Defined benefit" and "Defined contribution". The Company has both defined as.

- *Defined benefit plans define an amount of pension benefit that an employee will receive on retirement, usually dependent on one or more factors such as age, years of service and compensation.*
- *A defined contribution plan is a pension plan under which the Company pays contributions into publicly and privately administered pension plans on a mandatory basis. The Company has no legal or constructive obligations to pay further contributions if the fund does not hold sufficient assets to pay all employees the benefits relating to employee service in the current and prior periods.*

The liability recognized in the Statement of financial position in respect of defined benefit pension plans is the present value of the defined benefit obligation at the balance sheet date. The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method.

The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid and that have terms to maturity approximating to the terms of the related pension liability.

The Company pays contributions to publicly or privately administered pension insurance plans on a mandatory basis. The Company has no further payment obligations once the contributions have been paid.

The contributions are recognized as employee benefit expense when they are due. Prepaid contributions are recognized as an asset to the extent that a cash refund or a reduction in the future payments is available.

The Company's activities expose it to a variety of financial risks: market risk (including currency risk, fair value interest rate risk and price risk), credit risk, liquidity risk and cash flow interest rate risk.

The Company's overall risk management program focuses on the unpredictability of financial markets and seeks to minimize potential adverse effects on the Company's financial performance. The financial risk management is performed by the Company's financial department, based on

**Decisions from Managing Board:**

- a) Foreign exchange risk The Company operates internationally and is exposed to foreign exchange risk arising from various currency exposures. To manage the foreign exchange risk the Company provides enough cash in foreign currencies held in banks in order to maintain its future commercial transactions.*
- b) Price risks The Company is exposed to equity securities price risk because of available-for-sale investments held by the Company. The Company is not exposed to commodity price risk.*

*Credit risk The Company has no significant concentrations of credit risk. It has policies in place to ensure that wholesale sales of products are made to customers with an appropriate credit history.*

Trade receivables consist of large number of balances. The Company has policies that limit the amount of credit exposure. Liquidity risk prudent liquidity risk management implies maintaining sufficient cash and the availability of funding through an adequate amount of committed credit facilities.

Interest risk As the Company has no significant interest-bearing assets; the Company's income and operating cash flow are substantially independent of changes in market interest rates. The Company's interest rate risk arises from borrowings.

The Company has no specific policy, but in direct negotiation with lenders attempts to reduce interest rate risk. Interest rates of long-term borrowings are significantly lower than short term. Interest rates on short term borrowings are increased in respect of previous year.

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Additions to non-current assets include additions to property, plant and equipment and Intangibles. Additions to non-current assets - segment reporting.

**(In 000 MKD)**

|                                | 2019             |            | 2018             |            | IND        |
|--------------------------------|------------------|------------|------------------|------------|------------|
| Segments                       | Amount           | %          | Amount           | %          | 19/18      |
| Pharmacy                       | 1,015,044        | 93         | 1,042,653        | 96         | 97         |
| Chemistry Cosmetics Botanicals | 76,588           | 7          | 39,084           | 4          | 196        |
| <b>Total:</b>                  | <b>1,091,632</b> | <b>100</b> | <b>1,081,737</b> | <b>100</b> | <b>101</b> |

**Table 2. Additions to non-current assets - segment reporting**

## Dividends

The Group does not recognize the dividend payable before it is approved on the Annual General Meeting. The dividends for 2018 approved by shareholders on 8 April 2019 were Denar 458,033 thousands. Approved dividends are paid and retained earnings are appropriately decreased.

## Borrowings

(In 000 MKD)

|                      | 2019           |            | 2018           |            | IND          |
|----------------------|----------------|------------|----------------|------------|--------------|
| <b>Borrowings</b>    | <b>Amount</b>  | <b>%</b>   | <b>Amount</b>  | <b>%</b>   | <b>19/18</b> |
| Non-current          | 312,812        | 40         | 284,212        | 48         | 110          |
| Current              | 466,656        | 60         | 303,990        | 52         | 154          |
| <b>Total:</b>        | <b>779,468</b> | <b>100</b> | <b>588,202</b> | <b>100</b> | <b>133</b>   |
| <b>(In 000 MKD)</b>  |                |            |                |            |              |
|                      | 2019           |            | 2018           |            | IND          |
| <b>Maturity</b>      | <b>Amount</b>  | <b>%</b>   | <b>Amount</b>  | <b>%</b>   | <b>19/18</b> |
| Up to 1 year         | 466,656        | 60         | 303,990        | 52         | 154          |
| Between 1 to 3 years | 312,812        | 40         | 284,212        | 48         | 110          |
| <b>Total:</b>        | <b>779,468</b> | <b>100</b> | <b>588,202</b> | <b>100</b> | <b>133</b>   |

**Table 3. The maturity of the borrowings**  
**Related party transactions**

The consolidated annual report on the performance includes the financial results of the parent Company and the following subsidiaries:

| Subsidiary                           | 2019           | 2018           |
|--------------------------------------|----------------|----------------|
|                                      | % of ownership | % of ownership |
| Alkaloid DOO Zagreb, Croatia         | 100%           | 100%           |
| Alkaloid DOO Beograd, Serbia         | 100%           | 100%           |
| Alkaloid INT DOO Ljubljana, Slovenia | 100%           | 100%           |
|                                      | 100%           | 100%           |

|   |      |      |
|---|------|------|
| Alkaloid DOO Sarajevo, Bosnia and Herzegovina |      |      |
| Alkaloid farm SA Fribourg, Switzerland        | 100% | 100% |
| Alkaloid EOOD Sofia, Bulgaria                 | 100% | 100% |
| ALK&KOS Shpk Prishtina, Kosovo                | 100% | 100% |
| Alkaloid Bilna apteka DOOEL Skopje, Macedonia | 100% | 100% |
| Alkaloid Kons DOOEL Skopje, Macedonia         | 100% | 100% |
| Alkaloid USA LLC Columbus, Ohio US            | 49%  | 49%  |
| Fund "Trajce Mukaetov" Skopje, Macedonia      | 100% | 100% |
| Alkaloid DOO Podgorica, Montenegro            | 100% | 100% |
| OOO Alkaloid RUS, Moscow, Russia              | 100% | 100% |
| Alkaloid FARM DOO Ljubljana, Slovenia         | 100% | 100% |
| Alkaloid Veleđrogerija DOO Beograd, Serbia    | 100% | 100% |
| Alkaloid ILAC TLS Istanbul, Turkey            | 100% | 100% |
| ALKA-LAB DOO Ljubljana, Slovenia              | 100% | 100% |
| Alkaloid Kiev CO. LTD., Ukraine               | 100% | 100% |
| Alkaloid Shpk Tirana, Albania                 | 100% | 100% |

**Table 4. Related party transactions**

All subsidiaries are 100% owned by the Company, except investment in Alkaloid USA with the equity share of 49%. Although the investment of Alkaloid AD Skopje in Alkaloid USA LLC Columbus, Ohio USA is 49%, the Company exercises control.

In 2019 the company has increased its investment in two of its subsidiaries, in ALKA-LAB DOO Ljubljana, Slovenia by Denar 24,596 thousand equivalent to EUR 0.4 million and in Alkaloid DOO Beograd, Serbia by Denar 110,690 thousand equivalent to EUR 1.8 million.

The Company has representative offices in Russia and Ukraine. The operational results of the representation offices are included in the financial statements of the Company.




 Consolidated income statement

|   | (In 000 MKD)      |           |                  |           |            |
|---|-------------------|-----------|------------------|-----------|------------|
|   | 2019              |           | 2018             |           | IND        |
|   | Amount            | %         | Amount           | %         | 19/18      |
| <b>Sales</b>                                | <b>11,102,808</b> | <b>98</b> | <b>9,783,286</b> | <b>97</b> | <b>113</b> |
| Cost of sales                               | -5,974,145        | -53       | -5,354,335       | -53       | 112        |
| <b>Gross profit</b>                         | <b>5,128,663</b>  | <b>45</b> | <b>4,428,951</b> | <b>44</b> | <b>116</b> |
| Research and development expenses           | -109,931          | -1        | -86,125          | -1        | 128        |
| Selling and marketing expenses              | -3,323,516        | -29       | -2,882,776       | -29       | 115        |
| Administrative expenses                     | -420,697          | -4        | -371,896         | -4        | 113        |
| Provision for other liabilities and charges | -10,499           | -         | -633             | -         | 1,659      |
| Other income                                | 245,019           | 2         | 302,631          | 3         | 81         |
| Other expenses                              | -308,167          | -3        | -407,403         | -4        | 76         |
| <b>Operating profit</b>                     | <b>1,200,872</b>  | <b>11</b> | <b>982,749</b>   | <b>10</b> | <b>122</b> |
| Finance expenses (net)                      | -12,561           | -         | -13,983          | -         | 90         |
| <b>Profit before income tax</b>             | <b>1,188,311</b>  | <b>10</b> | <b>968,766</b>   | <b>10</b> | <b>123</b> |
| Income tax expense                          | -173,051          | -2        | -106,355         | -1        | 163        |
| <b>Profit from continuing operations</b>    | <b>1,015,260</b>  | <b>9</b>  | <b>862,411</b>   | <b>9</b>  | <b>118</b> |
| <b>Attributable to the:</b>                 |                   |           |                  |           |            |
| Shareholders of the Parent Company          | 1,015,318         | 9         | 862,445          | 9         | 118        |
| Minority interests                          | -58               | -         | -34              | -         | 171        |

Profit for the year

1,015,260 9

862,411

9

118

**Table 5. Consolidated annual report on the performance  
Sales by category**

(In 000 MKD)

|                      | 2019              |           | 2018             |           | IND        |
|----------------------|-------------------|-----------|------------------|-----------|------------|
| Sales                | Amount            | %         | Amount           | %         | 19/18      |
| Sales of goods       | 8,076,115         | 71        | 7,263,842        | 72        | 111        |
| Sales of commodities | 2,934,861         | 26        | 2,432,049        | 24        | 121        |
| Other sales revenues | 91,832            | 1         | 87,395           | 1         | 105        |
| <b>Total:</b>        | <b>11,102,808</b> | <b>98</b> | <b>9,783,286</b> | <b>97</b> | <b>113</b> |

**Table 6. Sales by category**

| Finance cost                                      | (In 000 MKD)      |            |                  |            |            |
|---|-------------------|------------|------------------|------------|------------|
|   | 2019              |            | 2018             |            | IND        |
| Expenses  | Amount            | %          | Amount           | %          | 19/18      |
| Foreign exchange transaction losses on borrowings | 876               | -          | 1,170            | -          | 75         |
| Interest expense on borrowings                    | 12,577            | -          | 13,945           | -          | 90         |
| <b>Total:</b>                                     | <b>13,453</b>     | <b>-</b>   | <b>15,115</b>    | <b>-</b>   | <b>89</b>  |
| <b>Total expenses:</b>                            | <b>10,160,408</b> | <b>100</b> | <b>9,118,283</b> | <b>100</b> | <b>111</b> |

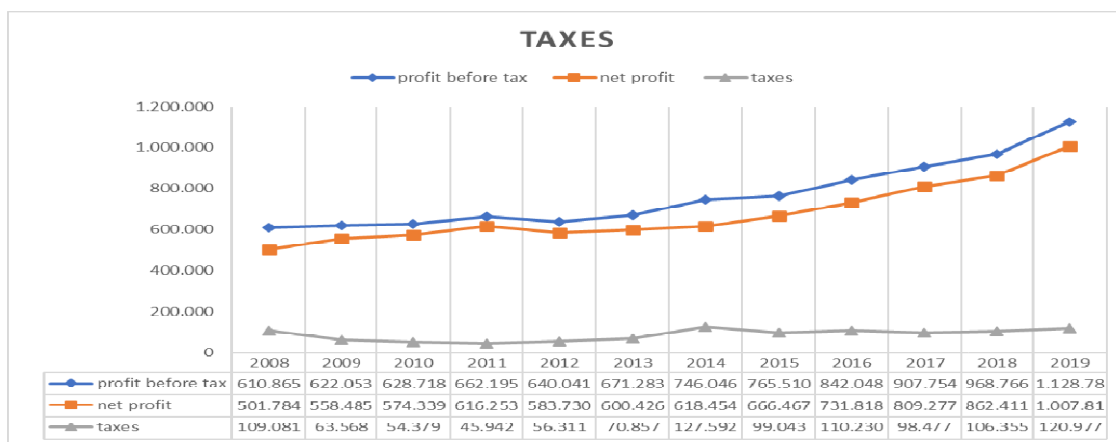
**Table 7. Finance cost**

Total expenses in 2019 are 10,160,408 thousand denars, which compared to last years' 9,118,283 thousand denars have increased for 11%. The largest portion in total expense of 29% belongs to Raw materials. Employee benefit expense has a portion of 24%, other expenses 3%. Finance costs consist of expenses on borrowings, the portion in total expenses is insignificant.

Consolidated profit before taxes for 2019 is 1,188,311 thousand denars, which compared to last years' 968,766 thousand denars has increased for 23%. The portion of consolidated profit before taxes in total revenues is 10%.

Consolidated income tax for 2019 is 173,051 thousand denars, which compared to last years' 106,355 thousand denars has increased for 63%. Consolidated Net profit for 2019 is 1,015,260 thousand denars, which compared to last years' 862,411 thousand denars has increased for 18%. The portion of consolidated Net profit in total revenues is 9%.

This means only one thing; Alkaloid had some taxes releases which are accepted by the law and as a company they have still some of the replacements as they this year had 11 million euros in reinvestments in their own company.



**Graph 4. Taxes Alkaloid<sup>5</sup>; <sup>6</sup>; <sup>7</sup>; <sup>8</sup>**

Alkaloid is also a sports sponsor, as well as Euro farm. Members from both of these two companies are part of the management of the Handball Federation of the Republic of North Macedonia, which gives the both opportunities to help up the sport and the companies.<sup>9</sup>

These opportunities include the marketing the companies would have so they in the reality may attract more customers than the others and still pay fewer taxes. It is a win-win situation the governments help the companies to enjoy.

Finally, the assumption for the taxes section would be that the sector has no political boundaries that slow down the growth and the usage of the potential. It seems that the

<sup>5</sup> Numeric line, page 9, Mathematics for economists, Drage Janev, Faculty of economics – Skopje, 2004

<sup>6</sup> Lineal diagram, page 41, Statistics for business and economics, fourth edition, Slave Risteski Ph.D and Dragan Tevdovski Ph.D, Faculty of Economics – Skopje, 2010

<sup>7</sup> Statistical series, page 30, Statistics for business and economics, fourth edition, Slave Risteski Ph.D and Dragan Tevdovski Ph.D, Faculty of Economics – Skopje, 2010

<sup>8</sup> Computer usage, page 75, Statistics for business and economics, fourth edition, Slave Risteski Ph.D and Dragan Tevdovski Ph.D, Faculty of Economics – Skopje, 2010

<sup>9</sup> <http://macedoniahandball.com.mk/upraven-odbor/>

governments ease the taxes so the sectors would have so the sector has stability. In accounting, revenue is the income that a business has from its normal business activities, usually from the sale of goods and services to customers.

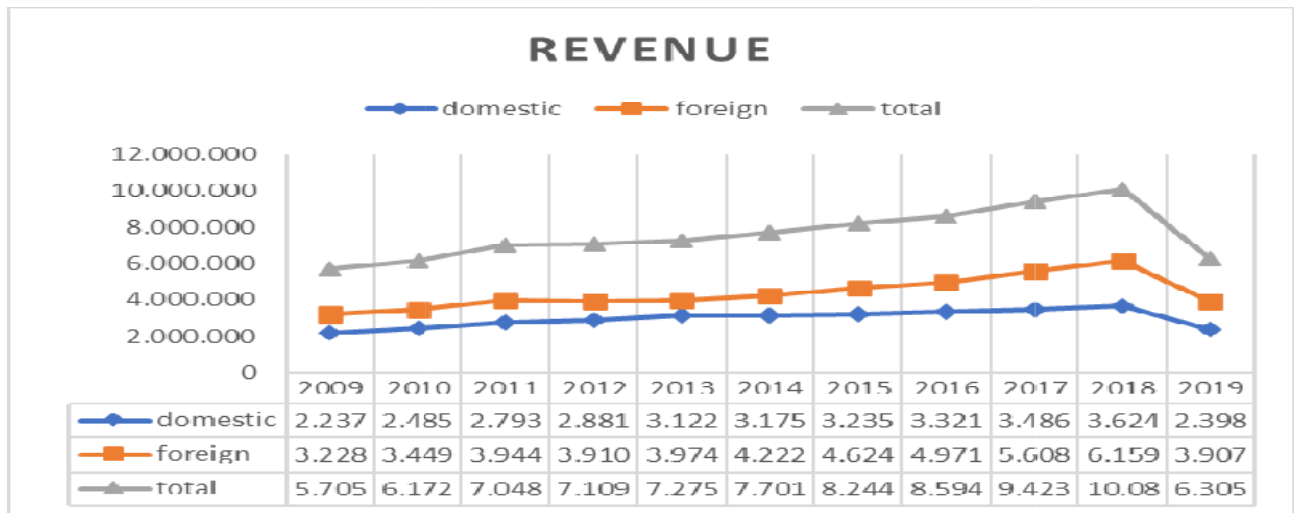
All of the year’s sales are included, but here is a slight difference. In the above definition are included sales of the products and services, which this company offers.

Still, there are some incomes that are accomplished in the year after the sales have been made. Meaning, some of the products might get in the hands of the retailers so they can be sold, but the income out of it might get later Alkaloid as on the graph below has a continuous growth of the revenue.

It does not fail to astonish, because it means that the company has no problem with the revenue. Despite the fact that the sales of the year are included, the revenue might be from other things rather than the things mentioned above.

The fact here is that the revenue is higher than the sales, so the company has other sources of income and also good clearance of the account receivables. This entity has its revenue from two sides. On the statements are shown foreign and home revenues.

This kind of a division opens another question. The revenue Alkaloid from the foreign market means that the company is very successful outside the borders, but first let’s analyzes the numbers.



**Graph 5. Revenue Alkaloid**<sup>10,11,12</sup>

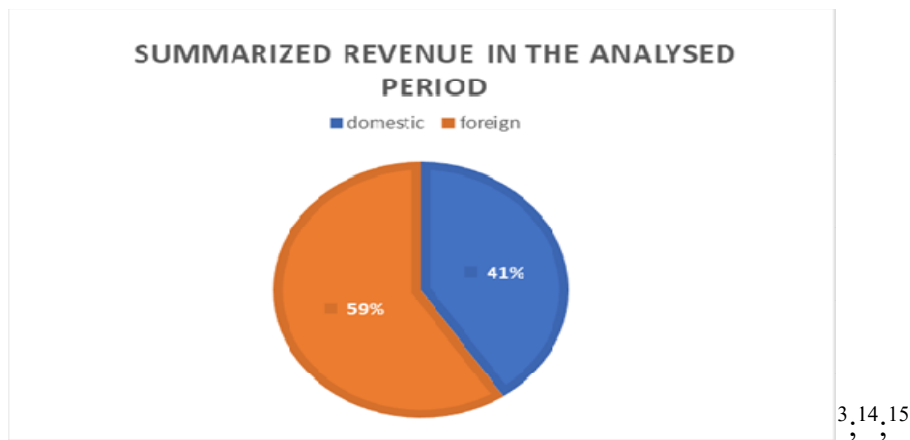
<sup>10</sup> Lineal diagram, page 41, Statistics for business and economics, fourth edition, Slave Risteski Ph.D and Dragan Tevdovski Ph.D, Faculty of Economics – Skopje, 2010

<sup>11</sup> Statistical series, page 30, Statistics for business and economics, fourth edition, Slave Risteski Ph.D and

The total revenue is the grey time series, that has a continues growth, similar to the total sales. Similar continuity has the foreign series and the domestic as well, but they differ in their high, which means that Alkaloid has higher export every year.

This might mean that the fulfillment of the management plans to have sustainability and growth of the company, according to them may not be accomplished within the borders and this company has the capacity to produce and to develop further by exporting outside the country. The three series have a growth tendency, except for the last year.

In 2019 the revenue has a steep movement downfall. This disagrees with the sales movement, which might be from the non-audited statements of the year, or the fact that the income of the rest of the revenue’s constituents is not as high as the sales this time.



**Graph 5. Summarized revenue in the analyzed period.**

The graph above says a lot about the division of the revenue from year of 2008 to the year of 2019. The percentage makes it clearer that Alkaloid has most of its revenues from the outside.

This does not mean that this country is not capable to endure the strength of the company, but it means that Alkaloid is healthy enough for broader financial accomplishments, making by this the Chemo-Pharmaceutical sector stronger.

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Dragan Tevdovski Ph.D, Faculty of Economics – Skopje, 2010

<sup>12</sup> Computer usage, page 75, Statistics for business and economics, fourth edition, Slave Risteski Ph.D and Dragan Tevdovski Ph.D, Faculty of Economics – Skopje, 2010

<sup>13</sup> Tables, page 38, Statistics for business and economics, fourth edition, Slave Risteski Ph.D and Dragan Tevdovski Ph.D, Faculty of Economics – Skopje, 2010

<sup>14</sup> Statistical series, page 30 , Statistics for business and economics, fourth edition, Slave Risteski Ph.D and Dragan Tevdovski Ph.D, Faculty of Economics – Skopje, 2010

<sup>15</sup> Computer usage, page 75, Statistics for business and economics, fourth edition, Slave Risteski Ph.D and Dragan Tevdovski Ph.D, Faculty of Economics – Skopje, 2010

At the moment it is more than obvious that these shares are the most wanted on the market. They had their ups and downs since the pandemic, but they are still high and desired. Alkaloid's share has become the most trusted financial instrument by the investors.

This fact is constructed by several arguments which confirm why the trustworthiness of the company and the shares<sup>16</sup> has grown the last year.

We already have come to a conclusion why this sector in the county has bigger perspective than before, but not everything is in the numbers we see; the deal is what stands behind them so they flow the way they do.

The importance of the managerial practice<sup>17</sup> in a company is a serious deal nowadays, regarding the fact that the speed the world moves can change the whole company in a blink of an eye. This means that the team that manages a company is far most important than anything else.

First argument that the company we have chosen to be an ideal of the sector in question is the following: The management of this corporation has a practice to give regular bonuses to the managers and employees.<sup>18</sup> It is a fair deal for the people working there, but that is not all.

The corporative practice goes deeper with the belief in their own company by buying more shares.<sup>19</sup> The act of buying casts positive light over the analysis, it makes the company and the sector stronger, because if the management does this deed, means that the trustworthiness becomes bigger every time they spend the bonuses on what they get it from.

To be fair, the price margin per share has made a pleasant surprise for many among the invest community in North Macedonia recently, which says that there are lots of hungry buyers and very lucky sellers.

### **III.2. Lek Skopje**

As a wholesale company, Lek Skopje plays an important role in the Chemo-Pharmaceutical sector in the Republic of North Macedonia, because it is a part of an international chain of Chemo-Pharmaceutical Company. The data included in this analysis are public and all include the revenue, net profit as well as their growth. (Saso Arsov, 2009)

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<sup>16</sup> <https://alkaloid.com.mk/trade-with-alkaloid-shares.nsp?r=12>

<sup>17</sup> The place of the financial management, page 16, Financial management, Saso Arsov, Faculty of Economics – Skopje, 2008

<sup>18</sup> <https://faktor.mk/zoshto-nema-limit-za-cenata-na-akcijata-na-alkaloid>

<sup>19</sup> Shares, page 158, Financial management, Saso Arsov, Faculty of Economics – Skopje, 2008

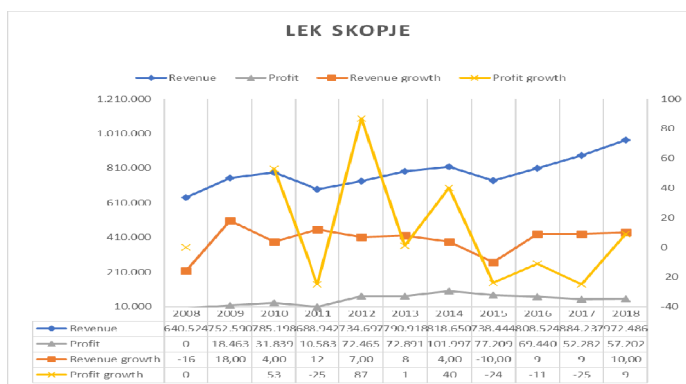
EVROPA LEK FARMA D.O.O.E.L. is located in, Former Yugoslav Republic of Macedonia and is part of the Wholesale Sector Industry. EVROPA LEK FARMA D.O.O.E.L. has employees across all of its locations. There are 1,825 companies in the EVROPA LEK FARMA D.O.O.E.L. corporate family.

Dun & Bradstreet provides data on over 120 million companies like EVROPA LEK FARMA D.O.O.E.L. around the world, including contacts, financials, and competitor information. To witness the full depth and breadth of our data and for industry leading sales intelligence tools, take D&B Hoovers for a test drive today.

Continually investing in modernization and advancement of its capacities, implementing new professional, security and quality standards, education for the professional staff as well as promoting and approaching to the world novelties and practices on the market in the country and the region, the wholesaler builds professional relations and partnerships with eminent international and domestic pharmaceutical, medical and cosmetic brands.

Annually pursuing the challenge on the Macedonian pharmaceutical market for placement of new and quality products, and advancing the existing production lines with the innovations of the eminent world manufacturers in the sector of drugs, food suppliers, diagnostic equipment, medical disposal, cosmetics and decorative cosmetics.

According to the market's needs, clients' requirements and insisting, the wholesaler EURO-FARM has continued expanding its successful working by opening specialized shops for orthopedic care devices and medical equipment. The growth is important to acknowledge the tendencies a company has in the sector we are dealing with here.



20,21 Graph 7. Lek Skopje

<sup>20</sup> <https://www.club200.mk/profile/LEK-SKOPJE-DOOEL-Skopje>

<sup>21</sup> <https://bizfluent.com/how-6385008-calculate-net-income-growth.html>

The revenue and the net profit as absolute time series have a positive growth tendency, with several steep downfalls. These series are found on the primary axis and the revenue growth as well as the net profit growth is on the secondary axis.

The steep downfalls of the revenue and the net profit makes the growth percentages of them both rumbling steeply up and down on the graph. Biggest downfall is noticed in the year of 2011, because the previous has a downfall in the absolute number.

Anyways, the financial statements of the company are not publicly posted online to be analyzed as Alkaloid's, this company has a positive movement in the year of 2018, which means that it might have a further growth tendency and stability. The company is very valuable asset that this country has, but it still is valued as a sustainable and growing.

### **III.3. Euro Farm**

The famous Eurofarm has a surprise in the years given on the graph. In the period 2010 to 2016 has a serious steep negativity in the growth shown on their website.

The wholesaler EURO-FARM is a modern, innovative, recognizable, loyal, socially-responsible company of the pharmaceutical industry which, following its vision, developing strategy, professional values, unique brand policy, the clients' needs, the collaborators' requirements, the trade trends and the business climate, daily upgrades and masters as a reliable, provisioned and confirmed partner in the wholesale of pharmaceutical products in the Republic of Macedonia and the region.

Led by the endeavor to leave a trace in the Macedonian pharmaceutical market, the wholesaler dedicatedly engages in conducting innovative, profitable and sustainable practices as to enhance its position and business performances.

Its developing path started on December, 9th, 2000 in Skopje by turning into reality the dashing enthusiasm, the productive visionary, the embroidered goals, the dedication, patience and knowledge of Tatjana Sterjeva, Bachelor of Science and Master of Human Resource Management, and her team, as a sequel of the successful story that had begun two years earlier with the opening of the first of the chain of pharmacies under this brand's name.

The development of EURO-FARM was releasing steadily in accordance with the trends and fashions in the pharmaceutical industry, the clients' needs and requirements, as well as the possibilities and plans of the company for a stable and lasting growth and advancement,



adjusting therefore to the modern market challenges, to the contemporary organizational tendencies and to the expense oriented strategy.

What's more, the permanent commitment for evolving a stable market position and conquering new markets, followed by enhanced competitiveness, efficiency and effect of the company was a main challenge for conducting the several ISO standards for quality and professional managing.

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According to the market's needs, clients' requirements and insisting, the wholesaler EURO-FARM has continued expanding its successful working by opening specialized shops for orthopedic care devices and medical equipment..

EURO-FARM stands out as a socially-responsible company due to the care for the environment, the quality of life, the education, cultural and sport achievements and so on, which despite its goals and clients' and collaborators' requirements, by recognizing the needs of the community, works on promotion of the positive values in the society.

Recognition for the wholesaler's successful persistence is its long-lasting ranging on the list of the top 200 largest and most successful companies in the Republic of Macedonia, based on its profitability, increased liquidity, market position, internal organization and other economic factors.

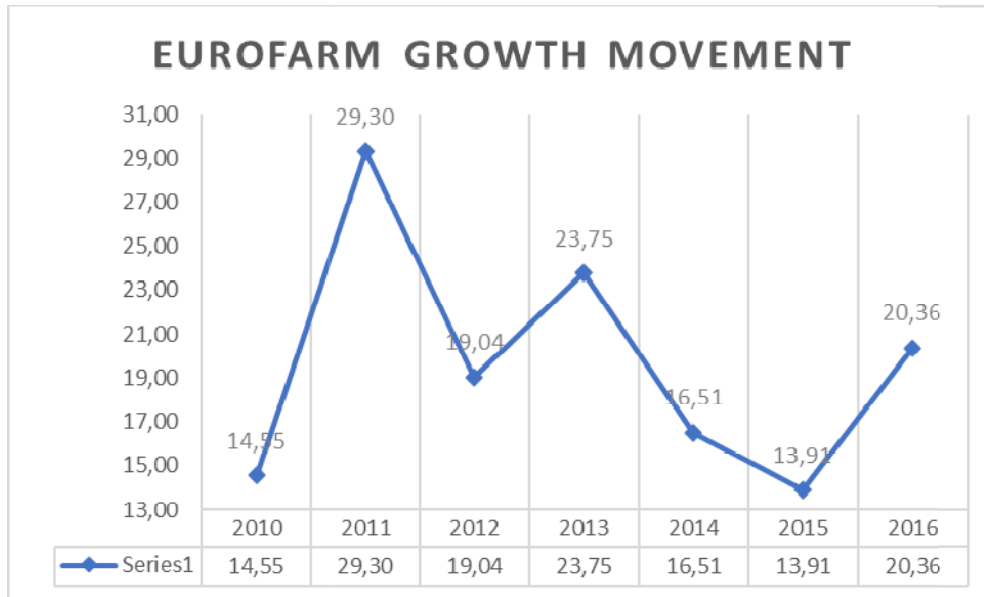
Working under the motto *"We are here to take care of your health"*, the wholesaler EURO-FARM is a dedicated, responsible and reliable company through the continual investment, development and quality products and services, honoring the tradition, it builds new values as a checked and trustworthy partner to its clients and collaborators.

In the last 7 years, the wholesaler EURO-FARM counts a continual economic average growth of 20 percent.

| <b>Economic Growth by years</b> | <b>%</b> |
|---------------------------------|----------|
| <b>2010</b>                     | 14.55%   |
| <b>2011</b>                     | 29.30%   |
| <b>2012</b>                     | 19.04%   |
| <b>2013</b>                     | 23.75%   |
| <b>2014</b>                     | 16.51%   |
| <b>2015</b>                     | 13.91%   |
| <b>2016</b>                     | 20.36%   |

**Table 8. Economic Growth by years**

As we can see from the table in the last 7 years, the wholesaler EURO-FARM counts a continual economic average growth of 20 percent.



**Graph nr.8 Euro farm growth movement**

The graph given above starts in 2010 with a steep movement up. It is a bit interesting that the very same year Lek Skopje is faced with a steep downfall and Eurofarm has enhancement. It might be the fact that the Chemo-Pharmaceutical sector has big players and each struggle for a place under the sun.

### **III.4. Zegin Doo**

Zegin is by far the largest wholesaler and retailer in the country. With more than 150 pharmacies in North Macedonia. The revenues of that LLC last year amounted to 65.65 million euros, which is almost the same as the sum of the revenues of the other three wholesalers.

This company, which last year employed 88 people, has the lowest profit from the competition. "Zegin" ended the year with a profit of just 32,000 euros and has 10% higher than 2018. This company has by far weakest result with the competition.

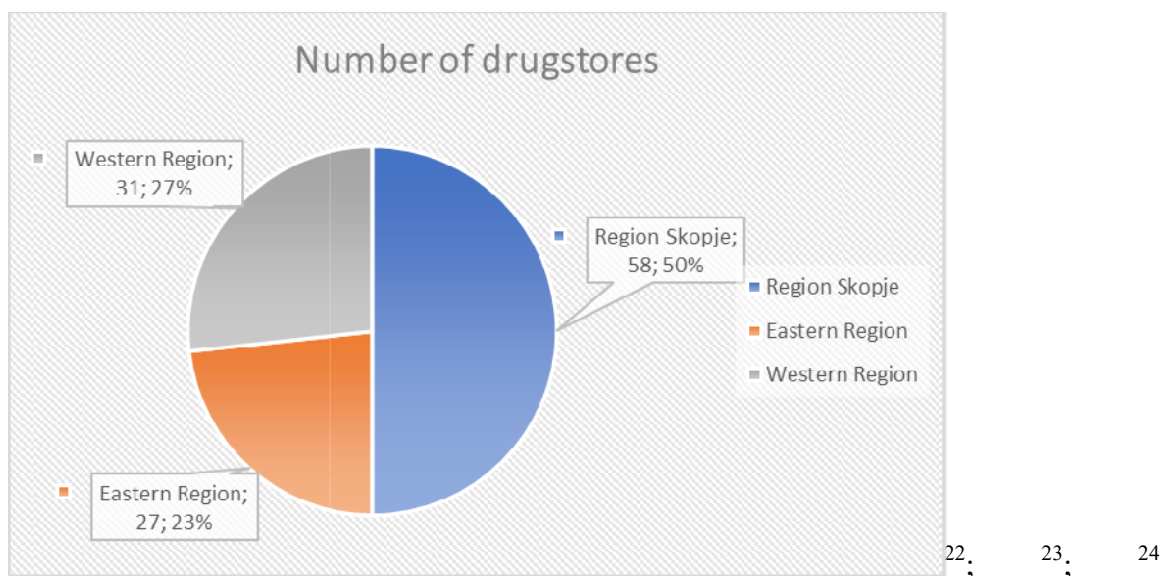
"Zegin" is a family property of the Mehandziski family and German citizen Vasko Ivanov. The graph shown below shows a bit different aspect of the things. It confirms the demand issue every company deals with in order to create a stable supply for the people.

So, below there are three regions. Their division says a lot about the drugstores Zegin D.O.O has within the divisions meaning that the bigger the percentage is, there are more people to buy the products this company offers.

It is obvious that in the capital it is most inhabited so that is why the drugstores are mostly spread within this region. Second goes the Western Region, which by all numbers is more inhabited than the Eastern, because it is well known that the Eastern is known for the youngsters leaving the county for better survival somewhere in Europe or America.

This graph only opens up the eyes of the fact that this sector has place to sell its good and services, but it might come across a problem if there is less demand which comes up from the people leaving the country.

As a solution is the export, which we saw in Alkaloid's statements and the fact that much of these Chemo-Pharmaceutical representatives have a secondary activity as well.



**Graph 9. Number of drugstores**

This sector has a great opportunity to sustain stable and firm growth, besides some of its constituents have had some steep downfalls through the years, it has a growing prosperity and increasing income from the export, which taxes remain in the Republic of North Macedonia.

<sup>22</sup> <http://www.zegin.com.mk/home/read-more.html>

<sup>23</sup> [https://mk.wikipedia.org/wiki/%D0%A0%D0%B5%D0%B3%D0%B8%D0%BE%D0%BD%D0%B8\\_%D0%BD%D0%B0\\_%D0%9C%D0%B0%D0%BA%D0%B5%D0%B4%D0%BE%D0%BD%D0%B8%D1%98%D0%B0](https://mk.wikipedia.org/wiki/%D0%A0%D0%B5%D0%B3%D0%B8%D0%BE%D0%BD%D0%B8_%D0%BD%D0%B0_%D0%9C%D0%B0%D0%BA%D0%B5%D0%B4%D0%BE%D0%BD%D0%B8%D1%98%D0%B0)

<sup>24</sup> <http://www.stat.gov.mk/>

## **CHAPTER 4: DATA PROCESSING AND SYSTEMATING**

### **IV.1 EMPIRICAL ANALYSIS**

The steps in which this study has passed are: literature review, formulation of main research question and research sub-question, hypothesis raising, identification of conceptual models, data processing and analysis and finally extraction of conclusions and recommendations. The methodology followed during this paper is based on the deductive research method.

- The primary data is the analyze of financial statements of pharmacy's that we choose like case study's.
- The secondary data are the analysis of economy of North Macedonia with other countries, we will analysis the Pharmaceutical Industry Boost Economic Growth and Chemo-pharmaceutical sector has the potential for economic sustainable growth in the Republic of North Macedonia

### **IV.2. Model definition**

The research design and method is the 'general plan' on how the researcher will go about answering the research question(s). Moreover this 'general plan' outlines the clearly-defined research objective(s) as well as the relevant sources which are intended to be used for data collection.

Furthermore the method of data analysis must be included. ( MARK N.K. SAUNDERS, 2010).The illustration below describes the research method which is implemented in this master thesis.

The first step is to create the research design and conduct an extensive literature review. The objective is to identify relevant theories as well as develop the conceptual framework for this study.

Theories are used in a variety of different ways however their most common meaning is that a theory is a 'way of explaining regularities' (Frank AMadasun, 2010). The next step is to prepare the analyze of financial statements of chosen pharmacy's in North Macedonia.

Consequently the identified theories can be compared to the results achieved through the data collection and analysis. Therefore some theories may potentially be rejected and discarded.

Other theories will be verified and the collected data may also lead to the extension of certain identified theories. This final step of the research results in the formulation of specific implications which are relevant and valid for business practice

### **IV.3. Techniques used during empirical analysis**

Empirical research is an important method of systematic investigation because it gives the researcher the opportunity to test the validity of different assumptions, in the form of hypotheses, before arriving at any findings. Hence, it is a more research approach.

The technique that is used during empirical analysis in my master thesis is case study. The case study method is another common data gathering method in an empirical research study.

It involves sifting through and analyzing relevant cases and real-life experiences about the research subject or research variables in order to discover in-depth information that can serve as empirical data. There we will have to analyze the 4 pharmacies like a case study.

### **IV.4. Findings from empirical analysis**

#### **IV.4.1 Findings from empirical analysis Alkaloid**

As we saw we have analyzed the financial statements of Alkaloid from 2008-2019. The indicators of this stage were: sales, costs, gross profit and taxes of this pharmacy. The consolidated incomes from sales for 2008 amount to 4.7 billion denars (or 77 million euros) which indicates an increase of 17.5 percent compared to 2007.

The successful placement of products on the market and the resource management of the Company. resulted in the accomplishment of a consolidated net profit 501.8 million denars (or 8.2 million euros) which indicates an increase of 33.3 percent compared to 2007, when it amounted to 376.5 million denars (or 6.1 million euros).

It is a fact that the recession that actually started in 2008, did not cause any greater problems in our current operations, due to the fact that its transfer to the European land, as well as to South-East Europe, started towards the end of the year, while more serious consequences are expected in 2009.

However, the positive results are evident despite the fact that, just like the other companies, Alkaloid AD started facing the difficult liquidity problems of the health funds and the buyers, the devaluations of the local currencies, difficulties with the payments, formal and

informal barriers with the purpose of protecting the domestic industries. It is my pleasure to conclude that in the sales income structure, our export sales are predominant and have a continuously growing trend, particularly in the pharmaceutical segment, which demonstrates an increase of 21 percent compared to 2007. The gross profit from 2007-2008 is growing.

Macedonian tax legislation is subject to varying interpretations and changes that occur frequently. As a result, transactions may be challenged by tax authorities and the Group may be assessed additional taxes, penalties and interest, which can be significant.

The period that remains opened for review by the tax and customs authorities with respect to tax liabilities is five years. Besides the crisis, Alkaloid ended 2009 successfully, with growth in the revenues and growth in the profit.

The consolidated incomes from sales are increased by 16%, whereas consolidated net profit has risen by 11% compared to 2008. In 2009, Alkaloid noted a 10% growth in its export sales, and in all its four production programs: pharmaceuticals (16%), chemicals (22%), cosmetics (14%) and botanicals (6%).

We achieved total consolidated sales of EUR 96.5, which represents an increase of nearly 8,5%. The growth rate of the individual sales was 10%; domestic have risen by 11% and the export sales reached over 56 million Euros, which represents a growth of about 6,5%.

The growth of the nonconsolidated net profit from MKD 503.267 million in 2009 to MKD 581.587 million in 2010 represents a rise of 16%. The growth of the consolidated net profit was 3%, from MKD 558.485 million in 2009 to MKD 574.339 million in 2010.

The four basic programs of the Company also noted growth in their respective sales levels, those being: Pharmaceuticals 8%; Chemistry 22%; Cosmetics 8% and Botanicals 2%. Ordinary shares are classified as equity.

Purchases of the Parent Company's equity share capital (treasury shares), the consideration paid, including any directly attributable incremental costs are deducted from equity attributable to the Parent Company's equity holders until the shares are cancelled, reissued or disposed of.

In 2011, we noted growth of the individual sales of 8%; domestic sales were raised by 12% and the consolidated export sales reached EUR 64.1 mil., which represents a growth of more than 14%.

The sales in South Eastern Europe region have risen by 9%, the growth in Russia and CIS was 28% and sales in EU and EFTA countries sales have risen 30%.

Sales in the USA also note an upward trend rising to 67%, all compare to year 2010. The growth of the consolidated net profit was 7%, from MKD 574.339 million in 2010 to MKD 616.253 million in 2011.

EBITDA noted growth of 9% from MKD 944.523 million in 2010 to MKD 1.028.096 millions in 2011. 58% of our production was intended for the export markets. 84% of the total consolidated sales belonged to the Pharmaceuticals segment, 10% for Cosmetics, 3% Botanicals and 3% for the Chemistry segment. Our consolidated net profit amounted to MKD 583,730,219.

2013 was marked with a mild recovery from the recession, which still impacts the economic flows in the Euro-zone. In 2013 we achieved total consolidated sales of MKD 7,097 bn., which is an increase of 5% compared to year 2012.

Our consolidated net profit has risen for 3% compared to the previous year. 56% of the consolidated sales were effectuated on the foreign markets. Greatest percentile growth was noted on the domestic market (9%), then on the markets in Bosnia and Herzegovina, Romania, Slovenia and the market in the United States of America.

84% of these placements belonged to the Pharmaceuticals segment; 10% Cosmetics; 3% Botanicals and 3% to the Chemicals segment we achieved total consolidated sales of MKD 7.397.836.000, which represents a growth of 4%, thus surpassing the sum of EuR 120 mil. in our placements.

Our consolidated net profit amounted to MKD 618.454.000 noting 3% growth compared to 2013. 85% of our total (consolidated) sales were in the segment of Pharmaceuticals, 15% in Chemicals, cosmetics and Botanicals. We achieved total consolidated sales of MKD 7.860.414.000, which represents a growth of 6%, thus surpassing the sum of EuR 127,5 mil.

Our consolidated net profit amounted to MKD 666.467.000 noting 8% growth compared to 2014. We achieved total consolidated sales of MKD 8.292.770.038, which represents a growth of 6%.

Our consolidated net profit amounted to MKD 731.818.674 noting 10% growth compared to 2015. 83% of our total (consolidated) sales were in the segment of Pharmaceuticals, 10% in Cosmetics, 4% Botanicals and 3% Chemicals segment.



We achieved total consolidated sales of MKD 9.094.716.094, which represents a growth of 10%. Our consolidated net profit amounted to MKD 809.277.171 noting 11% growth; both compared to 2016. 85% of our total (consolidated) sales were in the segment of Pharmaceuticals, 9% in Cosmetics, 3% Botanicals and 3% Chemicals segment.

Out of the total consolidated sales, 38% were realized on the domestic market and 62% were placements in the foreign markets. Out of those, 33% were effectuated in the markets of Southeastern Europe, 20% in Western Europe, 7% were placed in Russia and CIS and 2% on the remaining markets. In 2017, we achieved 13% growth in our export sales.

In the course of 2017, we had 131 new employments in the company, and as at 31 December 2017, Alkaloid AD Skopje counted 1856 people.

Despite all objective and subjective challenges, “Alkaloid “managed to generate positive financial results in its operations employing extraordinary efforts and precautions in everyday operations. We achieved total consolidated sales of MKD 9.783.285.973, which represents a growth of 8%.

Our individual net profit amounted 848.199.257, growing 11% and consolidated net profit amounted to MKD 862.410.928 noting 7% growth; all compared to 2017. 85% of our total (consolidated) sales were in the segment of Pharmaceuticals, 9% in Cosmetics, 3% Botanicals and 3% Chemicals segment.

Out of the total consolidated sales, 37% were effectuated on the domestic market and 63% were placements in the foreign markets. Out of those, 35% belonged to the markets of Southeastern Europe, 21% in Western Europe, 6% were placements in Russia and CIS and 1% on the remaining markets. In the course of 2018, we had 166 new employments in the company and, as at 31 December 2018, “Alkaloid AD Skopje“counted 2022 people.

## **IV.2 Findings from empirical analysis LEK SKOPJE, EURO FARM, ZEGIN DOO**

The revenue and the net profit as absolute time series have a positive growth tendency, with several steep downfalls. These series are found on the primary axis and the revenue growth as well as the net profit growth is on the secondary axis.

The steep downfalls of the revenue and the net profit makes the growth percentages of them both rumbling steeply up and down on the graph. Biggest downfall is noticed in the year of 2011, because the previous has a downfall in the absolute number.

The famous Euro farm has a surprise in the years given on the graph. In the period 2010 to 2016 has a serious steep negativity in the growth shown on their website.

Eurofarm has its own handball league and several clubs, which means the company has some tax releases, which is positive for the growth and it the last year shown on the graph has a positive steep growth, which gives hope that the following year has the same. In the last 7 years, the wholesaler EURO-FARM counts a continual economic average growth of 20 percent.

This sector has a great opportunity to sustain stable and firm growth, besides some of its constituents have had some steep downfalls through the years, it has a growing prosperity and increasing income from the export, which taxes remain in the Republic of North Macedonia.

It confirms the demand issue every company deals with in order to create a stable supply for the people. So, below there are three regions. Their division says a lot about the drugstores Zegin D.O.O has within the divisions meaning that the bigger the percentage is, there are more people to buy the products this company offers.

### **IV.3 Hypothesis testing**

As we examined above, the Government of the Republic of Macedonia will aim to build a sustainable long-term and financial system, quality and accessible health care, with citizens at the centre of the health system and a strengthened sense and responsibility of the individual for the health of for himself and for the health of others.

In this paper, we defined a multinational pharmaceutical company as a company whose sales in foreign countries represent 10% or more of its total sales. So, taking into account the fact that the pharmaceutical system is closely related to economic development and at the same time to argue the same I raise the main hypothesis and the auxiliary ones to wrap up the work in question.

But how much these hypotheses support our study in the following tables we bring their testing.

**Table 8. Testing the main hypothesis, empirical estimates**

| Testing the main hypothesis  | We accept or reject (for testing the main hypothesis we use the results from the examination of economic growth)   |
|--|--|
| <p><b>1. Chemo-pharmaceutical sector has the potential for economic sustainable growth in Republic of Macedonia.</b></p> | <ol style="list-style-type: none"> <li>1. Economists generally define an economy as a series of interconnected markets.</li> <li>2. In each market, households, firms, and the government interact to facilitate an exchange of goods, services, and resources.</li> <li>3. Several factors unique to pharmacy education may explain why conducting an economic impact study is challenging.</li> <li>4. Pharmacy training is specific, the economic impact can easily be attributed to the academic programs training local pharmacists.</li> <li>5. The pharmaceutical industry is a fundamental sector of knowledge and innovation based economy which is comprised of companies engaged in manufacturing and distributing drugs for human or veterinary use.</li> <li>6. The pharmaceutical industry operates under unusual characteristics, both in its structure and in its business transactions, that are little known outside the industry but which substantially affect the process of</li> </ol> |

|  |   |
|--|---|
|  | <p>bringing new pharmaceuticals to world markets.</p> <p>7. The effect of pharmaceutical industry production and/or trade on economic growth can be analyzed indirectly through the life expectancy variable and its relationship with economic growth in the literature.</p> <p>8. Pharmaceutical industry exhibits a multinational firm based structure</p> <p>9. Pharmacy education is a unique field.</p> <p>10. Pharmaceutical industry is a critical sector of welfare for all countries in the world and it is an important source of growth and competitiveness for the main producer and exporter countries.</p> |
|--|---|

As if we could see that the hypothesis is approved. To support the main hypothesis we have set up a total of 5 auxiliary hypotheses which we test through the techniques applied in the second phase of empirical analysis.

**Table 9. Testing auxiliary hypotheses, empirical estimates**

|  |   |
|--|---|
| <b>Testing auxiliary hypotheses</b>  | We accept or reject (for testing the main hypothesis we use the results from the examination of political stimulations  |
| <b>1. The existing economic potential is not used as it should, this could be from the lack of the political stimulation of this sector from the government.</b> | <p>1. Pharmaceuticals is one of the most regulated and sustainable sectors in North Macedonia, even that less studied from the point of view of internal financial analysis.</p> <p>2. Policymakers - look at the degree of</p> |

|  |  |
|--|--|
|  | <p>market concentration and its performance in relation to governance priorities.</p> <p>3. Economic potential is not used as it should be, in North Macedonia we need political stimulation of pharmacy – sector.</p> |
|--|--|

As we can see the auxiliary hypotheses is approved.

**Table 10. Testing auxiliary hypotheses, empirical estimates**

| <b>Testing auxiliary hypotheses</b>   | We accept or reject (for testing the main hypothesis we use the results from the examination of work licenses.   |
|---|--|
| <p><b>1. Pharmacists in the Republic of Macedonia require work licenses in order to work in pharmacies.</b></p> | <p>1. One of the most important elements that affect the development of any sector is the process of legislative regulation.</p> <p>2. The first element is the licensing procedure to conduct trading activity with wholesale, retail, manufacturing and import-export in the pharmaceutical sector.</p> <p>3. The second element relates to the legal definition of reimbursable drugs.</p> <p>4. The third element relates to the pricing policies of pharmaceutical drugs.</p> <p>5. The law <i>FOR MEDICINES AND MEDICAL PRODUCTS</i> regulates the</p> |

|  |  |
|--|--|
|  | <p>drugs and medical devices for use in human medicine, the conditions and the manner of ensuring their quality, safety and efficiency, the manner and procedures for their production, examination, placing on the market, trade, pricing, control of quality, advertising and inspection.</p> <p>6. This law also regulates narcotic drugs, psychotropic substances and precursors necessary for the production of drugs or medical devices if they are not regulated by another law.</p> <p>7. Pharmacists have to complete a five year Master of Pharmacy degree and one year residency programme, as well as passing the state license exam.</p> <p>8. In Macedonia, the initial work license must be renewed every seven years by attending continuing education courses, accredited by the Pharmacists' chamber.</p> <p>9. Pharmacists in the Republic of Macedonia require work licenses in order to work in pharmacies.</p> |
|--|--|

As we can see the auxiliary hypotheses is approved.

**Table 11. Testing auxiliary hypotheses, empirical estimates**

|                                     |   |
|-------------------------------------|---|
| <b>Testing auxiliary hypotheses</b> | We accept or reject (for testing the main hypothesis we use the results from the examination of patient services. |
|-------------------------------------|---|

|  |  |
|--|--|
| <p><b>1. The pharmacists' role has gradually shifted from compounding to dispensing medicines, and recently towards patient- centered services based on models of clinical pharmacy and pharmaceutical care.</b></p> | <ol style="list-style-type: none"> <li>1. The potential barriers for implementing pharmaceutical care in practice have been classified into four categories: education, skills, resources and environment. Other barriers include: deficient clinical knowledge and communication skills, insufficient time and inappropriate space, absence of a recognized reimbursement system, lack of adequate drug information resources, poor relationships with doctors and lack of access to patient health records.</li> <li>2. The pharmaceutical care concept has been recently introduced in the Republic of Macedonia, as part of wider reforms within the pharmaceutical sector.</li> <li>3. This thesis seeks to discuss current opportunities and challenges which the pharmacy profession faces when implementing pharmaceutical practice in Macedonia.</li> </ol> |
|--|--|

As we can see, the auxiliary hypotheses.

**Table 12. Testing auxiliary hypotheses, empirical estimates**

|  |   |
|--|---|
| <p><b>Testing auxiliary hypotheses</b></p>   | <p>We accept or reject (for testing the main hypothesis we use the results from the examination of financial debt ratios.</p> |
| <p><b>1. The profitability of pharmaceutical companies is negatively and consistently affected by financial debt ratios.</b></p> | <p>1. The pharmaceutical sector was chosen to be analyzed in this paper because the pharmaceutical industry is among the</p>  |

|  |  |
|--|--|
|  | <p>first industries that invest in research and development.</p> <ol style="list-style-type: none"> <li>2. Pharmaceutical companies have been top performers in the healthcare sector in an era of aging populations, rising healthcare costs, and the on-going development of new and extremely profitable medicines.</li> <li>3. Key financial ratios for pharmaceutical companies are those related to R&amp;D costs and the company's ability to manage high levels of debt and profitability.</li> <li>4. The debt ratio measures the amount of leverage that a company has and indicates the proportional amount of a company's assets that are financed through debt. The ratio is calculated as total debt divided by total assets.</li> </ol> |
|--|--|

As we can see the profitability of pharmaceutical companies is negatively and consistently affected by financial debt ratios.

**Table 13. Testing auxiliary hypotheses, empirical estimates**

|  |   |
|--|---|
| <b>Testing auxiliary hypotheses</b>  | We accept or reject (for testing the main hypothesis we use the results from the examination of growth this year.   |
| <b>1. Pharmaceutical industry expected to see positive growth this year.</b> | <ol style="list-style-type: none"> <li>1. Pharma sector has been jolted too but there is hope that things will ease and growth will resume.</li> <li>2. The impact on the cash flows has led many of the companies in the pharma</li> </ol> |



|  |   |
|--|---|
|  | <p>sector to impose a freeze on the hiring process.</p> <ol style="list-style-type: none"><li>3. Currently, no layoffs have been considered by companies and further decisions on increments are yet to be finalized and have been put on hold.</li><li>4. However, unlike the other industries, the pharmaceutical industry is expected to see a positive impact, on an overall basis, on its growth in this year.</li><li>5. Pharmaceutical industry expected to see positive growth this year.</li></ol> |
|--|---|

As we can see the pharmaceutical industry this year will have positive growth this year in North Macedonia.

## CONCLUSIONS AND RECOMMENDATIONS

1. This paper describes from a financial point of view the pharmaceutical sector, a fairly important of the Macedonian economy.
2. The pharmaceutical sector is characterized by critical and high value inputs for e health distributions that often make a significant difference in outcomes health for individuals and for the entire population
3. The World Health Organization divides health economy into Health Macroeconomics and Health Microeconomics.
4. The pharmaceutical industry is one of the most challenging industries in the chemical industry, with a large number of sub-industries, high levels of R&D and high capital expenditures.
5. The pharmaceutical industry exports effect economic growth positively which is an important finding for the purpose of this study.
6. We conclude Pharmaceutical industry is very important sector of a country because it requires special attention; it is not similar to other industries which for country the impact of sector could be only economically in this case impacts of this are viewed on long-term aspects such health of humans, development of industry which will help humans have more safety, health, happiness and after this comes the economical aspect which is with big influence on economy of country.
7. The macroeconomics differs from microeconomics in all aspects given. This is strictly confirmed at the very beginning of this analysis as they both have diverse indicators in their construction.
8. The supply applies and refers to the production potential of the economy.
9. Products in this sector have characteristics that the consumer cannot evaluate before use and in some cases the characteristics become difficult to identify even after use as the effects of drugs may not be visible for a long time.
10. Pharmacy education in the country offers a theoretical basis for pharmaceutical care subjects.
11. The negative relation between short-term debt ratio and the profitability in the first model means that supplying the finance through short-term debts does not lead to profitability in

the companies. Moreover, the negative relation in the second model means that those companies, who finance through long-term debts, face loss of profitability.

12. The negative and meaningful relationship between profitability and capital structure in all the three models is in line with the pecking order theory and information asymmetrical theory and is compatible with the findings of studies.
13. It can be concluded that managers and decision makers are forced to use internal financing since outsourcing may cause some information to be released to the outside investors, leading to the company to be probably under the control of the outside investors. So they prefer inside financing comparing to the outside one.
14. The concept of Pharmaceutical Care has recently been introduced in the Republic of Macedonia.
15. Pharmacists still face the challenge of embracing this concept in their daily practice, even though the country possesses a favorable pharmacy workforce, solid legal basis and supportive organization of health care services
16. This viewpoint highlights the need for clear and integrated national approach to develop a strategy for patient-oriented pharmaceutical care.
17. Analysis of current pharmacy practices and identification of opportunities and barriers for pharmaceutical care implementation need further attention, if Macedonia is to advance its pharmacy practice activities and thereby improve patient care.
18. During the interview with pharmacy worker we can see that the first Hypothesis is approved, the existing economic potential is not used as it should, and this could be from the lack of the political stimulation of this sector from the government.
19. Also the positive opinion of pharmacy told us that Pharmacists in the Republic of Macedonia require work licenses in order to work in pharmacies. The second hypothesis is approved.
20. The pharmacists' role has gradually shifted from compounding to dispensing medicines, and recently towards patient- centered services based on models of clinical pharmacy and pharmaceutical care, this told us that the third hypothesis is approved.
21. Funding combination is the most important issue for the companies while they know the amount of required capital. Companies should be careful regarding the appliance of financial providing methods compatible with the investment strategy of company and

profitability. This study seeks to examine the relationship between the capital structure and the profitability of pharmaceutical companies Tetovo.

22. Pharmaceutical industry is a critical sector of welfare for all countries in the world and it is an important source of growth and competitiveness for the main producer and exporter countries.
23. Pharmaceutical industry is different from other manufacturing industries by two main aspects: i) the strict patent protection of the industry (both techniques, materials and products are covered by patent laws), ii) the massive R&D expenditures of the firms. These aspects of the sector are mainly the result of the uphill, long, costly and risky process of developing new products to markets.
24. Therefore, advanced economies with qualified infrastructure, high levels of capital stock, resources and facilities lead the world pharmaceutical production and exports. Several European countries, USA and Japan are the main actors in this market.
25. The studies on pharmaceutical industry, especially from a trade-related perspective seem to be limited. The main goal of this study is to analyze the effects of pharmaceutical industry trade on economic growth in major pharmaceuticals producer and hence exporter countries.
26. This is the first study in the related literature which analyzes the relationship between the exporter country's GDP (and GDP per capita) and pharmaceutical industry trade.
27. Within this framework, panel data fixed effects and random effects models are specified to analyze the relationship between economic growth and pharmaceutical industry exports.
28. Pharmaceuticals have brought tremendous health improvements to developing countries. The international community could greatly increase these benefits by implementing systems to provide better access to existing pharmaceuticals and to manage their use, as well as by investing in the global public good of R&D on diseases that disproportionately affect the poor.
29. As we see during writing the thesis the main hypothesis and auxiliary hypothesis are approved.
30. Economists generally define the economy of interconnect markets.

31. The effect of pharmaceutical industry production and/or trade on economic growth can be analyzed indirectly through the life expectancy variable and its relationship with economic growth in the literature.
32. Pharmaceutical industry is a critical sector of welfare for all countries in the world and it is an important source of growth and competitiveness for the main producer and exporter countries.
33. Pharmaceuticals is one of the most regulated and sustainable sectors in North Macedonia, even that less studied from the point of view of internal financial analysis.
34. Economic potential is not used as it should be, in North Macedonia we need political stimulation of pharmacy – sector.
35. Pharmacists in the Republic of Macedonia require work licenses in order to work in pharmacies.
36. This law also regulates narcotic drugs, psychotropic substances and precursors necessary for the production of drugs or medical devices if they are not regulated by another law.
37. Pharmacists in the Republic of Macedonia require work licenses in order to work in pharmacies.
4. The potential barriers for implementing pharmaceutical care in practice have been classified into four categories: education, skills, resources and environment. Other barriers include:
38. This thesis seeks to discuss current opportunities and challenges which the pharmacy profession faces when implementing pharmaceutical practice in Macedonia.
39. The pharmaceutical sector was chosen to be analysed in this paper because the pharmaceutical industry is among the first industries that invest in research and development.
40. The debt ratio measures the amount of leverage that a company has and indicates the proportional amount of a company's assets that are financed through debt. The ratio is calculated as total debt divided by total assets. Successfully managing debt obligations is a major factor in the long-term viability and profitability of any pharmaceutical company. The financial debt ratios affect negatively at the profitability of the companies.
41. Pharma sector has been jolted too but there is hope that things will ease and growth will resume.

42. However, unlike the other industries, the pharmaceutical industry is expected to see a positive impact, on an overall basis, on its growth in this year.

### **Recommendations**

1. Pharmaceutical Care should be recently introduced in North Macedonia.
2. We recommend passing the challenge of embracing the concept of daily practice.
3. We recommend using the national approach of development.
4. Also we recommend Macedonia to improve patient care.

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