

**Czech University of Life Sciences Prague**

**Faculty of Economics and Management**

**Department of economics**



**Bachelor Thesis**

**Economic Analysis of Nu Skin Enterprises**

**Tereza Švarcová**

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# CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

## BACHELOR THESIS ASSIGNMENT

Tereza Švarcová

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Thesis title

**Economic analysis of Nu Skin Enterprises**

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### Objectives of thesis

The objective of my thesis is to do an economic analysis of NuSkin Enterprises. I will firstly introduce the company and its founders and do a historical analysis of the company, its development, and its position on the market. I will evaluate its competition and analyse its most profitable product. Based on all these findings, I will assess whether it is appropriate to invest in the company and cooperate with it as its distributor.

### Methodology

This bachelor thesis is divided into two parts. Theoretical and practical. In the theoretical part, the descriptive method describes the Stock Analysis. The practical part is based on evaluating the company from the perspective of shares, dividends and revenue. Furthermore, fundamental analysis in assessing the company Nu Skin Enterprises and comparative analysis compared to Herbalife International and Apple Inc.

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### **Declaration**

I declare that I have worked on my bachelor thesis titled "Economic Analysis of Nu Skin Enterprises" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break any copyrights.

In Prague on 15.3.2022

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# **Economic Analysis of Nu Skin Enterprises**

## **Abstract**

This bachelor thesis deals with the Economic Analysis of Nu Skin Enterprises. The aim of this work is to determine whether it is appropriate to invest in this company and whether it is appropriate to work with it as its distributor. The work is divided into theoretical and practical parts. In the theoretical part, individual stock analyses are explained, focusing mostly on the fundamental analysis. The practical part deals with Nu Skin Enterprises and analyzes its historical and future development. Furthermore, comparative and fundamental analyses are used in the practical part. In the comparative analysis, Nu Skin Enterprises is compared with Herbalife International and Apple Inc. using three indicators: annual income, stock prices and market capitalization. In global fundamental analysis, Nu Skin's shares were compared to US inflation and to the GDP of the USA. It has been found that inflation does not affect the development of Nu Skin's shares, while GDP has a relatively strong impact on the development of the company's shares. In conclusion, it was found that both the company's value and the value of its stocks with regard to its historical development have a rising tendency, even in times of global crises. Therefore, investment in the shares of this company can be profitable. The company introduces new technology or products on the market almost every two years, which is beneficial both from the investor's perspective and from the distributor's perspective. It is also one of the few companies, which pays a large part of its income to the distributors.

**Keywords:** Stocks, Shareholder, Company, Analysis, Revenue, Price, Evaluation, Company analysis, Fundamental analysis, Dividend, Competitor, Inflation, GDP, Ratio

# Ekonomická analýza společnosti Nu Skin Enterprises

## Abstrakt

Tato bakalářská práce se zabývá ekonomickou analýzou společnosti Nu Skin Enterprises. Cílem práce je zjistit, zda je vhodné do této společnosti investovat a také, jestli je vhodné spolupracovat s ní jako její distributor. Práce je rozdělena na teoretickou a praktickou část. V teoretické části jsou vysvětleny jednotlivé akciové analýzy, zejména pak fundamentální analýza. Praktická část se zabývá samotnou společností Nu Skin Enterprises a analyzuje její historický vývoj. Tato část se zaměřuje i na vývoj firmy v následujících letech. V praktické části je použita komparativní analýza a také fundamentální analýza. V komparativní analýze je Nu Skin Enterprises porovnáváno se společnostmi Herbalife International a Apple Inc. za pomoci třech indikátorů: ročních příjmů, cen akcií a tržní kapitalizace. V globální fundamentální analýze bylo použito srovnání vývoje akcií společnosti Nu Skin Enterprises s inflací v USA a také s HDP v USA. Bylo zjištěno, že inflace nemá téměř vůbec vliv na vývoj akcií, a naopak HDP má poměrně silný vliv na vývoj akcií této společnosti. V závěru bylo zjištěno, že hodnota společnosti i hodnota akcií společnosti mají z hlediska historického vývoje stoupavou tendenci, a to i v době celosvětových krizí a proto investice do akcií této společnosti může být výnosná. Společnost vydává téměř každé dva roky novou technologii či produkt, což je přínosné jak z pohledu investora, tak z pohledu distributora. Nu Skin také jako jedna z mála společností vyplácí velkou část ze svých příjmů distributorům.

**Klíčová slova:** Akcie, Akcionář, Společnost, Analýza, Příjmy, Cena, Vyhodnocování, Analýza společnosti, Fundamentální analýza, Dividenda, Konkurence, Inflace, HDP, Poměr



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# 1 Introduction

The main focus of my bachelor thesis is the analysis of Nu Skin Enterprises. This company is in the Beauty and Wellness industry and launches innovative health and beauty technologies. The aim of my bachelor thesis is to analyze the Nu Skin Enterprises and decide whether it is appropriate to invest in this company and work with it as a distributor. The source of the data used for my analysis are taken from the Annual Reports of Nu Skin Enterprises.

In the theoretical part of my bachelor thesis, I describe individual stock analyses and focus mainly on fundamental analysis, which consists of three parts - global fundamental analysis, industry analysis and company analysis. In the practical part of my thesis I focus on the global fundamental analysis from the point of view of inflation and GDP. In the industry analysis, I evaluate Nu Skin Enterprises in the direct sales industry and in the company analysis I focus on Price Ratio Models and Cashflow Model.

I also analyze the company's most profitable product and I focus on two sectors that the company deals with: personal care and wellness. I evaluate the development of the company from the perspective of annual revenue, annual dividend, market capitalization, stock price, a number of customers and sales leaders.

Furthermore, I compare Nu Skin Enterprises with two competitors. The first one is Herbalife International, which also operates in the direct sales industry. I have chosen Apple Inc. as the second competitor, as it is also a company which focuses on innovative technologies, although in a different industry.. I compare the annual revenue, stock price and market capitalization of these companies.

## **2 Objectives and Methodology**

### **2.1 Objectives**

The objective of my thesis is to do an economic analysis of NuSkin Enterprises. I will firstly introduce the company and its founders and do a historical analysis of the company, its development, and its position on the market. I will evaluate its competition and analyse its most profitable product. Based on all these findings, I will assess whether it is appropriate to invest in the company and cooperate as its distributor.

### **2.2 Methodology**

This bachelor thesis is divided into two parts. Theoretical and practical. In the theoretical part, the descriptive method describes the Stock Analysis. The practical part is based on evaluating the company from shares, dividends, and revenue. Furthermore, fundamental analysis in assessing the company Nu Skin Enterprises and comparative analysis compared to Herbalife International and Apple Inc.

## **3 Literature Review**

### **3.1 Stock Analyses**

To be well informed in stock investments, we need to know factors that influence the price of a stock. This can be determined using various analyses. The most used analysis is the fundamental analysis, whose task is to find the internal cost of shares. The oldest analysis is the technical analysis, and it is also very often used to find the price of shares

These analyses are presented in detail:

- Psychological analysis
- Financial analysis
- Fundamental analysis
- Technical analysis

#### **3.1.1 Psychological Analysis**

Psychological analysis is very effective but also complicated. It is not one of the frequently used ones, and it depends a lot on the analyst's ability to handle it properly and make a profit. Because it assumes that the subject of the analysis is not the stock but the human being. The research issue is the behaviour of investors and the belief that psychological factors influence exchange rates in a short period. Gustave Le Bon wrote the book "Crowd Psychology" which discusses crowd psychology's fundamental principles and features. Economists such as G. Drasnar and J.M. Keynes also laid further foundations for psychological analysis.

#### **3.1.2 Financial Analysis**

The financial analysis is obtained from the financial statements of a joint-stock of the company from which various ratios are calculated, such as:

- Profitability indicators
  - ROA (Net Income/Average Total assets)
  - ROE (Net Income/Equity)
- Debt ratios
  - Debt ratio (Total debt/Total assets)
  - Leverage ratio (Total liabilities/ Total shareholders' Equity)

Investment indicators provide information on the potential return of the investor's invested funds. The following symbols express the hands:

- DPS - dividend per share (Sum of dividend over a period-special, one-time dividends in the period)/Ordinary shares outstanding for the period)
- EPS - earnings per share (Net income/number of shares outstanding)
- Payout ratio (DPS/EPS)
- Dividend cover (EPS/DPS)
- Retention ratio ((EPS-DPS)/EPS)
- Dividend yield (DPS/Price per share)
- Earnings yield (EPS/Price per share)
- P/E ratio (Stock price/Earnings per share)

### 3.1.3 Fundamental Analysis

Fundamental stock analysis is considered the most popular and comprehensive analytical approach. Fundamental analysis focuses on the intrinsic value of the market (*First Step Guide to Technical Analysis Tokyo Metropolitan Government* [no date]). To determine whether the share is overvalued, therefore, suitable for sale or the share is undervalued, therefore, ideal for purchase. Fundamental analysis assumes that each share has its intrinsic value based on historical data from the company's operations, and the current share price is around this inherent value. It, therefore, looks for significant factors that may affect the intrinsic value of the stock.

The intrinsic value of a share can be defined as: "*The share market participant's individual opinion on what the so-called "Fair exchange rate" should be since this value can be considered very short (so-called ultra-short), it is deemed to be very short (so-called ultra-short) to be unchangeable. It can therefore be compared with the current exchange rate*" (REJNUŠ Oldřich 2014).

The analysis first uses financial analysis to determine the stock's intrinsic value and forecast the company's future development. Then, the values found focus on whether the stock is undervalued or overvalued, which keeps the price around intrinsic value. As I mentioned above, several different procedures, models, and calculations can determine the inherent value.

The key to fundamental analysis is the quality and sufficient input data from a wide range of information sources. Information for the processing of fundamental analysis can be obtained, for example, from:

- financial statements
- data from company analysts and managers
- annual reports
- securities prospectus
- stock market news
- predictions of future market developments published by national banks and state institutions

The data needed to carry out the fundamental analysis are commonly available to the entire investing public. In the fundamental analysis, the long-term and medium-term investment horizons prevail.

Fundamental analysis is divided into three complementary levels.

- Global analysis
- Industry analysis
- Company analysis

The global analysis examines the relationships of macroeconomic aggregates and their impact on stock prices. The industry analysis analyses the specific research of the sector and the perspectives of its development. The whole analysis is concluded by a company analysis, which evaluates the entire company to calculate its intrinsic value. Fundamental analysis can be performed in two ways. The first way is the way from above. The stock analyst first performs a global analysis and ends with the company analysis. The second way is the opposite. It starts with a company analysis and ends with a global analysis.

#### 3.1.3.1 Global Fundamental Analysis

Global fundamental analysis focuses on the economy as a whole. The main task of fundamental global analysis is “*To identify, examine and assess the influence of the whole economy and the market (in the case of international investment and the whole of the economy and the markets) on the value of the analysis.*” (VESELÁ 2011). Based on the findings, it is then possible to assess the specific effects of macroeconomic aggregates on

stock markets and predict the future development of prices of these financial instruments.

The essential global factors affecting stock prices include:

- The real output of the economy
- Interest rates
- Inflation
- Cash offer
- Fiscal policy

#### 3.1.3.1.1 The Real Output of the Economy

The economy's actual output and its impact on the share price development can be measured using the gross domestic product or the industrial production index. I will measure the effect on stock price developments using the gross domestic product. The theory says that the correlation coefficient between GDP and exchange rate development is positive. This means that a positive relationship should apply, which would show that the share price will rise as the economy grows.

This theory is not very applicable in terms of stock price forecasts. There is one major problem. It was found that in the short to medium term, the development of the stock market is ahead of the actual development of the economy by three to nine months (VESELÁ 2011). Therefore, the stock index is considered one of the most reliable indicators for forecasting the change of individual phases within the business cycle.

The reason and logical explanation for this time discrepancy are that investors predict the development of GDP and thus make decisions as expected. Their expectations are positive if the assumption of GDP development is optimistic, which leads to the purchase of shares and, therefore, logically to an increase in the stock prices. It also affects the behaviour of companies and consumers. They are determined to invest more, which ultimately leads to a rise in the economy's real output. The opposite situation occurs when the stock market declines, which suppresses investment activity and thus reduces the real production of the economy. It is appropriate to monitor GDP development because it shows its performance.

GDP growth or decline does not depend only on investor expectations. There are other sources of economic exchange rate development, namely:

- growth of production factors



- increase in total factor productivity (ŠTÝBR David, KLEPETKO Petr, ONDRÁČKOVÁ Pavlína 2011).

The growth of production factors includes mainly labour and capital. An increase in total factor productivity is driven by technology, education, innovation, scientific progress, and development in aggregate demand.

### 3.1.3.1.2 Interest Rates

Interest rates are considered another factor affecting stock prices. In principle, this inverse relationship applies: if interest rates rise unexpectedly, stock prices can be expected to fall, and otherwise, if interest rates fall suddenly, it causes stock prices to rise (VESELÁ 2011). explained that the effect of unexpected interest rate changes on stock prices could occur in three ways:

1. The first way to explain this is to believe that stocks are valued by discounting future cash inflows. The interest rate is an essential element that influences the discount factor. That is, converting future income to present value. If interest rates rise, the discount factor also rises, i.e., the required rate of return increases, which causes stock prices to fall.
2. The second way the effect of unexpected interest rate changes can be explained is based on a competitive relationship between the stock and bond markets. As interest rates rise, stock market yields fall. Conversely, yield rates on debt securities are rising. This causes funds to shift from stock markets to the bond market, where investors can achieve higher returns. After this move, the demand for shares will fall, and thus their prices will also decrease. This happens until the yield is balanced in both markets.
3. The third explanation is linked to the borrowed capital market, in other words, the market of unrestricted funds, the price of which is the interest rate. If interest rates rise, the cost of loan capital will also increase, i.e., the general funds that the company could use for investments. The consequence of this will be a reduction in expected profits and thus a decline in market stock prices. The opposite is also true. If interest rates fall, the cost of borrowed capital falls. The expected profits will increase and thus the market price of the shares.

All the above considerations lead to a unique conclusion: the growth of interest rates is due to otherwise unchanged conditions in addition to market prices (exchange rates) and shares.

#### 3.1.3.1.3 Inflation

Stocks are often seen as instruments that can hedge against rising inflation. Thanks to the growth of the dividend and the profit of companies in the period of inflation. Studies and hypotheses do not fully support this statement and tend to do the opposite. This means a negative relationship between inflation and the stock market.

The rise in inflation is associated with the end of the upward phase of the economic cycle. Investors expect a slowdown in the growth of the economy's real product and project their negative expectations into stock value calculations. Veselá interprets this relationship as follows: *“Changes in the expectations of future GDP developments may cause changes in the demand for money, monetary or fiscal policies, which may be accompanied by a general increase in the price level.”* (2011) This is stated as a mediated effect hypothesis.

The second possible hypothesis is the monetary illusion hypothesis. When calculating the required interest rate, investors do not distinguish between changes in the nominal interest rate and the real interest rate. They, therefore, expect a nominal interest rate that is higher and therefore results in a lower intrinsic value of the share than is realistic. Thus, the correct stock prices are underestimated, which leads to a decline in demand for equity instruments.

The third hypothesis that we can interpret the effect of inflation on stock prices is the tax effect hypothesis. This hypothesis focuses on accounting. Significantly when depreciating fixed assets and valuing the company's inventories in the period of inflation. The fixed-assets depreciation calculations are based on acquisition prices, but current market prices are higher with higher inflation. This underestimates the underestimation, which is deductible from the tax base, increases the tax burden and thus reduces the actual profit and the company's residents. This causes a drop in stock market prices. Evaluating the company's inventories causes similar problems, especially with the FIFO methodology. Then inflation underestimates the costs needed to acquire new stocks. The same problem occurs with the depreciation of fixed assets.

The inflationary environment generally increases uncertainty in the economy. This also increases the investment risk, which causes a drop in demand for shares and thus their market prices.

#### 3.1.3.1.4 Cash Offer

Over time, opinions on how changes in the money supply affect stock prices change. The money supply acts as a leading indicator. The financial theory explains this relationship in three ways:

1. The first of these is the liquidity effect. When increasing the funds in circulation, investors feel an excess of funds, and thus, they need to invest in the financial markets and, therefore, in the equity ones, grows. However, suppose the central bank applies a restrictive monetary policy, and there is a sudden drop in the money supply. In that case, investors limit their investment as they do so. Inquiries about the shares together with their courses are now declining.
2. The second explanation is based on the so-called transmission mechanism, which assumes that the growth of the money supply will first increase the demand on the bond market and thus increase their exchange rates and thus reduce their yields. Due to the unfavourable situation on the bond market, investors will shift their attention to the stock market, which will cause stock prices to rise.
3. The third and last possible explanation for influencing the growth of the money supply is interest rates. These can indirectly affect stock prices by increasing the money supply. A higher amount of money in circulation will cause a decrease in interest rates, and this will be reflected in a reduction in the price of borrowed capital, making it cheaper for companies and encouraging companies to increase investment. The increase in investment activity of companies leads to a rise in their revenues and thus an increase in dividends paid. So, stock prices will also rise.

All these methods lead to a uniform conclusion. An increase in money supply causes an increase in demand in the stock market (REJNUŠ Oldřich 2014).

#### 3.1.3.1.5 Fiscal Policy

Fiscal policy is an instrument of the state's economic policy. Both the revenue and expenditure sides of the state budget are created.

There may be an increase in taxation to increase the state budget. The higher corporate tax burden leads to lower profits and, at the same time, dividend payments. This leads to a decrease in growth potential and thus to a reduction in the value of shares on the stock market. Conversely, tax cuts may have the opposite effect on the stock market.

Another option for increasing the state budget is the issue of government securities. This is mainly used to cover the budget deficit or public debt. This government decision has a somewhat negative impact on the stock market. Government bonds are considered low-risk instruments. Their supply will cause a decline in demand for shares and thus a decline in the stock market.

### 3.1.3.2 Industry Analysis

Industry fundamental analysis seeks to find common characteristics of a given sector. Different segments of the economy do not respond in the same way to changes in the development of the whole state's economy. For this reason, fundamental industry analysis is performed. Therefore, it is first necessary to classify individual sectors, including specific companies, and consider whether the company has the potential for future development in the industry (REJNUŠ Oldřich 2014). Several sectoral factors can be used to characterise a given sector:

- Industry sensitivity to the business cycle
- Market structure of the industry
- Degree of industry regulation

#### 3.1.3.2.1 Industry Sensitivity to the Business Cycle

Sectors are divided according to how they respond to the business cycle and are divided into three groups:

1. Cyclical industries
2. Neutral industry
3. Countercyclical industries

**Cyclical industries** almost copy the business cycle. This includes products whose purchases can be postponed. Rising in the period of expansion, i.e., at the beginning of the first half or in the middle of the growth phase, are characteristic of the cyclical sector. On

the contrary, the difficulties for this period occur at the beginning or in the middle of the recession. Thus, the more money flows into the sector, the economy and the incomes of the population grow, the more economic entities spend. We can include here, for example, construction, automotive, electronics and various luxury products (MUSÍLEK Petr 2011).

**Neutral sectors** are not dependent on the business cycle, including goods with low price elasticity. Those are products for which there is a stable demand at any stage of the economic process. In other words, products necessary for everyday life or addictive products. We can include here, for example, the food industry, tobacco products and the pharmaceutical industry. The neutral sector creates better conditions for more defensively based investment strategies.

In contrast to cyclical industries, **countercyclical industries** are characterised by upswings in times of recession and difficulties in times of expansion. This includes initiatives that produce cheaper substitutes for expensive cyclical products. People do not have the financial resources during the recession and turn to cheaper substitutes. We can include here, for example, the food industry or the clothing and footwear industry.

Veselá divides stocks into three categories based on the measurement and disruption of historical development - cyclical, defensive, and growth groups (VESELÁ 2011).

#### 3.1.3.2.2 Market Structure of the Industry

The industry's market structure is another factor that affects the volatility of profits, corporate sales, and stock prices. We can distinguish the type of market structure according to several factors:

- number of competing companies in the industry
- pricing method
- characteristics of the product that the company produces
- the existence of barriers to entry into the sector

Markets in the economy are divided into perfect and imperfect. However, perfect needs are only given in theory. It is challenging to meet the example of an ideal market in

the real world. Imperfect markets are divided according to the intensity of competition into several market structures:

- Monopolistic
- Oligopoly
- Imperfect competitive

*Table 1: Types of characteristics of individual market sectors*

| Market structure                | Number of firms and differentiation of product                         | Degree of price control by firms | Barriers to entry | Advertising methods                   |
|---------------------------------|--|----------------------------------|-------------------|---------------------------------------|
| <b>Perfect competition</b>      | Many manufactures of identical products                                | No                               | No                | Market exchange or auction            |
| <b>Monopolistic competition</b> | Many manufacturers with small differences in products                  | Small                            | No                | Advertising and rivalry in quality    |
| <b>Oligopoly</b>                | Several manufactures with the same or slightly differentiated products | Small                            | Small             | Advertising and rivalry in quality    |
| <b>Monopoly</b>                 | One product  | Significant (usually regulated)  | Significant       | Advertising and promotion of services |

Source: (SAMUELSON Paul Anothony, Nordhaus William D. 2005)

A **monopoly** market structure is a designation where only one company operates on the market. Due to this position, this company usually makes high profits, and its competition is generally discouraged by high entry costs for entering the market. If the prices of products are not influenced by state regulation, the company can determine its price to be constantly profitable despite the increase in costs. Due to the facts mentioned above, investments in a monopoly company are considered very safe and suitable. The company can get into a monopoly position either by overcoming its competition (e.g. Microsoft) or by protecting state intervention from the competition. This includes, for example, the operation of railways and trains (SIMPSON Brian P. 2010).

In the **Oligopoly** market structure, there is usually only a small number of companies that are just as strong. Entering this market is not easy and will discourage most competitors. However, it is not insurmountable. The sales and profits of these companies are stable. Examples of oligopolies in the sector are, for example, telephone operators, banks, insurance companies or the automotive industry.

The final form of market structure is **imperfect competition**. This is characterised by many competitors, who usually produce a slightly different product. None of the competitors can influence the price, and the costs of entering this market structure are not high. Profits, sales, and stocks are primarily volatile, as due to increased competition, companies cannot give significantly high margins. Examples are essential foods and cosmetics (VESELÁ 2011).

#### 3.1.3.2.3 State Regulation of the Industry

The development of stock prices can also be influenced by government regulations implemented in several ways. For example, the government may require specific licenses to enter the industry, protecting companies already operating from the competition. Furthermore, they can influence pricing through fixed price caps, reducing profit margins. Government regulation can also take the form of various controls on environmental impact or subsidies (REJNUŠ Oldřich 2014).

#### 3.1.3.3 Company Analysis

The Company's fundamental analysis aims to quantify the final intrinsic value of the share and then compare it with the current share price. This determines whether the stock is undervalued, overvalued, or correctly valued. Subsequently, a recommendation is given whether it is appropriate to invest in this company or not. As stated by Benjamin Graham and David Dodd "*the analyst's goal may not be to quantify intrinsic value accurately, but to decide as to whether the instrument's market price is adequate, significantly lower, or significantly higher.*" (GRAHAM Benjamin, DODD David Le Fevre 2009). The inherent value of a share is determined using various models, tools and analytical methods, which are:

- Dividend discount models
- Profit models

- Cashflow models

### 3.1.3.3.1 Dividend Discount Models

Dividend discount models are considered one of the oldest and most challenging methods. They are based on the principle that the internal value of the shares is the current value of future revenue from its tenure. While holding shares, we can distinguish two types of income. Dividends which are owners paid at regular intervals and income from shares. In identifying an undervalued title, this difference may be considerable. The basis of these models is that the current value of all future revenues is calculated by their risk-based discounting (DAMODARAN Aswath 2006).

These models operate with a redundancy in the form of dividends, and if the shares of shares are considered, they work with the sales exchange rate of the shares. The estimated amount of dividends can be challenging to determine, especially when it is a medium or long-term investment horizon. To avoid any inaccuracy, or at least mitigate them, a pre-calculated dividend growth rate is used for continuous growth or decrease in these models (VESELÁ 2011). Dividend discount models are divided into two different types:

- Dividend discount models for finite holding period
- Dividend discount models with endless tenure

#### **Dividend Discount Models for Finite Holding Period**

They are used if the owner of the shares is considering its sale in the next two, a maximum of three years. When calculating the internal value of the claims, both dividend and stock exchange, it cannot be accurately be estimated. The internal value in this model can be calculated as follows:

$$V_0 = \sum_{n=1}^N \frac{D_n}{(1+k)^n} + \frac{P_N}{(1+k)^N} \quad (1)$$

$V_0$ .....stock's fair value

$D_n$ .....expected dividend paid in each year holding

$N$  .....an integer corresponding to the end of the stock held

$K$ .....required rate of return (discount rate)

$P_N$ .....expected sales exchange rate of shares



## Dividend Discount Models with Endless Tenure Time

Dividend discount models with endless tenure times are used if it is not considered a short sale of shares. Therefore, a sales exchange rate of the stock is not included in the internal value calculation and is calculated with the current value of future dividends designated either in absolute terms or use of dividend growth. The general form of this model looks as follows:

$$V_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_n}{(1+k)^n} \quad (2)$$

$V_0$ .....stock's fair value

$D_1$ .....dividend (at year 1)

$n$ .....number of years for last dividend value

$k$ .....required rate of return (discount rate)

One of the basic models for endless tenure is Gordon's model. Two primary factors must be met for its use:

1. The rate of dividend growth (G) must be constant.
2. The requested yield rate (K) should be higher than the expected dividend growth rate.

Constant growth in dividend growth, which is a prerequisite for this model, is challenging to achieve the requirement for this model due to the volatility of profits (BARESA Suzana, BOGDAN Sinisa, IVANOVIC Zoran 2013). If these assumptions are met, the Gordon model of expression is possible (VESELÁ 2011).

$$V_0 = \frac{D_1}{k-g} = \frac{D_0(1+g)}{k-g} \quad (3)$$

$V_0$ .....stock's fair value

$D_1$ .....dividend (at year 1)

$D_0$ .....a dividend in the basic year

$k$ .....required rate of return (discount rate)

$g$ .....dividend growth

### 3.1.3.3.2 Price Ratios Models

Profitable models are also the most widely used methods to evaluate the internal price of the stock. Unlike dividend discount models that are more theoretical, profitable models apply more in investment practice. Another difference is that they do not come out of expected dividends, but they are working with profit (REJNUŠ Oldřich 2014). It can be further distinguished into three methods:

- P/E ratio
- P/BV ratio
- P/S ratio

#### **The P / E Ratio Method**

P/E Ratio is one of the most popular indicators for investors. Mainly due to his uniformity in the calculation. This indicator is given by the ratio of the market price of shares and net profit per share. This indicator says what multiple net profit investors are willing to pay for a given share. And according to this value, it is possible to anticipate the security's market behaviour because its value indicates how investors trust or distrust those companies. P/E Ratio should acquire larger values if investors trust companies.

Two types of P/E Ratio are distinguished:

- Trailing Twelve Months (TTM).
- Forward

The first indicator is Trailing Twelve Months P/E. Given the current cost of shares divided by the last four quarters of the EPS, this is given. This indicator can be calculated easily because companies offer financial results, including EPS, every quarter

$$(P/E)_B = \frac{P_0}{E_0} \quad (4)$$

$P_0$ .....current cost of shares

$E_0$ .....earnings per share

The second indicator is Forward P/E. Given the current price of shares divided by projected EPS in the next four quarters, this is given. This calculation is based on Gordon's

single-stage dividend discount model and can be written to the following relationships (VESELÁ 2011).

$$(P/E)_N = \frac{P_0}{E_1} = \frac{p}{k-g} \quad (5)$$

$E_1$ .....expected profit per share

$P_0$ .....price adequately valued shares

$p$ .....payday

$k$ .....required share rate

$g$ .....the rate of profit growth (identical to dividend growth)

We will use this formula to calculate the internal value of the stock:

$$V_0 = (P/E)_N * E_1 \quad (6)$$

$V_0$ .....the internal value of the stock

$E_1$ .....expected profit in next year

### **The P/BV Ratio Method**

The second favourite indicator is the Method P / BV Ratio. This is due to the current stock exchange rate ratio and the carrying amount per share. The advantage of this indicator is that there is no need for many input data for the calculation and that the result can be achieved even if the company does not pay dividends and does not create profit. But it also has a lower explanatory capability than P/E Ratio and P/S Ratio. Historical P / BV Ratio, as a further representative of this indicator, can be calculated again as the ratio of historical data on the level of stock and its carrying amounts (VESELÁ 2011).

Mathematically can be written as follows: (DAMODARAN Aswath 2006)

$$(P/BV)_B = \frac{P_0}{BV_0} \quad (7)$$

$P_0$ .....price per share

$BV_0$ .....book value of assets

### **The P/S ratio Method**

The third indicator is the P/S ratio, like the P/BV mentioned above ratio method. They are relative to the market price ratio and the number of sales applicable to one share.

We can also use this method if the company has a loss or minimal profit. And compared to the P / E indicators exhibits minor variation. The disadvantage of P / S indicators is that it is not commonly available as the previous two indicators. Therefore, if the analyst wants to use it, he must often calculate himself the Ratio (VESELÁ 2011).

$$(P/S)_B = \frac{P_0}{S_0} \quad (8)$$

$P_0$ .....price per share

$S_0$ .....sales per share

### 3.1.3.4 Cashflow models

Unlike the previous one, Cashflow models don't work just with profit which is distributed to shareholders but also with the company's value as a whole.

- FCFE - Free Cash Flow to Equity
- FCFF - Free Cash Flow to Firm
- WACC - Weight Average Cost of Capital

#### **FCFE Model**

FCFE model or free cash flow to equity measures how much cash could be paid to shareholders of the company, after all operating costs, interest, principal, and necessary investments in working and fixed capital are paid. In other words, the FCFE model can be described so that this model is discounted instead of paid dividends, potential dividends (DAMODARAN Aswath 2006). Free cash belonging to shareholders is determined based on the current quantity FCFE as follows:

$$FCFE = \text{Net Income} + \text{Depreciation \& Amortization} - \text{Increase in Net Working Capital} - \text{Capital expenditures} + \text{Net borrowing} \quad (9)$$

The internal value of the shares can then be expressed by the following relationship, if it is a stable company growing at a steady pace and that the growth rate that this model uses is the same or less than the growth rate of the economy in which the company operates.

$$V_0 = \frac{FCFE_1}{k - g_{FCFE}} = \frac{FCFE_0(1 + g_{FCFE})}{k - g_{FCFE}} \quad (10)$$

$V_0$ .....value of equity

$FCFE_1$ .....expected free cash flow to equity in one year

$FCFE_0$  starting level of free cash flow to equity

$k$  required return on equity

$g_{FCFE}$  constant expected growth rate in free cash flow to equity

### FCFF Model

Another cash flow model is FCFF Model or Free cash flow to firm. Expresses the summary value of the company's share for shareholders and lenders together. In addition to the free funds of shareholders, there are also the free cash prices of bond owners, which the company issued, creditors and shareholders of priority. The calculation can be written as follows:

$$FCFF = \text{Net Operating profit After taxes} + \text{Depreciation \& Amortization} - \text{Increase in Net Working Capital} + \text{Capital Expenditures} \quad (11)$$

The internal stock value is then counted as follows:

$$V_0 = \frac{FCFF_1}{WACC - g_{FCFF}} = \frac{FCFF_0(1 + g_{FCFF})}{WACC - g_{FCFF}} \quad (12)$$

$V_0$  value of equity

$FCFF_1$  expected free cash flow to firm in one year

$FCFF_0$  starting level of free cash flow to firm

$WACC$  weighted average capital costs

$g_{FCFF}$  constant expected growth rate in free cash flow to firm

### WACC Model

The average weighted capital costs WACC converts the future cash flow values to the current value. The formula for its calculation is followed:

$$WACC = \frac{E}{E+D} r_e + \frac{D}{E+D} r_d (1 - t) \quad (13)$$

$WACC$  weighted average capital costs

$E$  market value of equity

$D$  Market value of debt

$r_e$  cost of equity

$r_d$  cost of debt

$t$  corporate tax rate

### 3.1.4 Technical Analysis

The technical analysis concentrates on the study of market supply and demand (*First Step Guide to Technical Analysis Tokyo Metropolitan Government* [no date]). It describes the development of market prices of shares and the volume of trading in the graphical form, of which it derives another future trend. This method is the oldest, and its origins go back to the 18th century. The technical analysis assumes that stock courses contain all information relevant to the share.

The difference from the fundamental analysis is that the technical analysis does not inform whether the shares are undervalued or overestimated. Even if they are correctly rated. Technical analysis determines when what happens. Therefore, it is possible to decide the appropriate time to purchase or sell a security. However, it is still needed to remember that the technical analysis does not provide us with an utterly precise moment when the trade to realise the history is only tendency to repeat. Still, it does not mean that it will be duplicated exactly. Another critical factor for successful trading is the experience of the analyst, based on which he improves his judgment (VESELÁ 2011).

Principles of technical analysis are based on three basic assumptions:

- Market discounts everything
- There are patterns in the movement of courses
- History tends to repeat

For technical analysis, we can framework three main benefits:

- Adaptability - can be applied to different types of trading and at other time stages
- Flexibility - concentration on shares and markets with significant trends
- Overall view - complex view of markets

## **4 Practical Part**

In the practical part of my bachelor thesis, I focus on the analysis of Nu Skin Enterprises. First, I evaluate its historical development and based on this I estimate the future development of Nu Skin. In the following chapter, I focus on comparing Nu Skin Enterprises with Herbalife International and Apple Inc. from the point of view of Annual Reven, Stock Price and Market Capitalization. Then I process a global fundamental analysis through which I find out if the inflation and GDP affects the development of the shares of Nu Skin Enterprises. In industry analysis, I focus on the direct sales industry and evaluate the global sales ratio according to different categories. Finally, in the corporate analysis, I calculate the Price Ratio Models and the Cashflow Model.

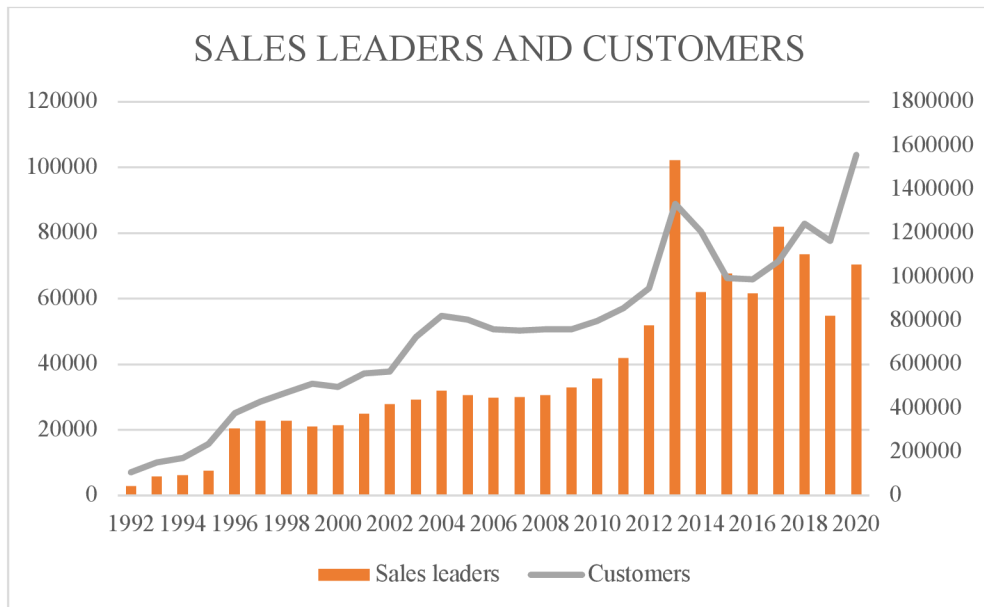
All these data are then used to determine whether it is appropriate to invest in the company and work with it as its distributor.

### **4.1 About the Nu Skin Enterprises**

Nu Skin Enterprises was founded in 1984 in the United States in Utah. Three founders, Sandie Tillotson, Blake Rooney, and Steve Lund had the vision to create a company that would market products to help people. Their main philosophy was “All from the good, none from the bad”. There has been significant interest in the products since the company’s beginning, and the first product sold out within a few hours. Over the years, the company gradually grew, but its philosophy did not change. Nu Skin Enterprises is a leader in anti-ageing and markets patented beauty and wellness technologies for home use.

The company sells its products through brand affiliates and sales leaders, who share the products they love to earn supplemental income. In 2020, the company had 70,435 sales leaders and 1,557,302 customers worldwide. As shown in the chart below. The number of Nu Skin Enterprises customers and sales leaders are on the rise.

Figure 1: Number of Sales Leaders and Customers



Source: Own processing based on data from Nu Skin’s annual reports

Nu Skin Enterprises focuses on researching and developing innovative technologies in health and beauty. They have 75 full-time scientists and hundreds more external scientists worldwide. They have two research centres in Provo, Utah and Shanghai, China. In 2003, the company launched a biophotonic scanner that measures carotenoid antioxidants in skin tissue. In other words, it can evaluate whether nutritional supplements work. Following the merger of Nu Skin Enterprises with Pharmanex, Lifepak has been launched, a comprehensive nutritional supplement that will provide the body with everything it needs. Thanks to the biophotonic scanner, the company can guarantee a refund if the value on the scanner does not increase after using the products. This puts the company in a very advantageous position, as it is the only company in the world with a patent for such technology. The entire Nu Skin product portfolio is moving in this direction. They pay attention to the uniqueness of technologies and products. No wonder the company has won several awards for its products and technologies. For example, The Business Intelligence Group (BIG) announced a technology AgeLOC Lumispa as a “Product of the year 2021” for four consecutive years. Nu Skin Enterprises has been named the World's # 1 Brand for Beauty Device Systems and Forbes List of the World's Top Female Friendly Companies (Forbes.com 2022).

The company's vision is: *“To become the world’s leading innovative beauty and wellness company, powered by our dynamic affiliate opportunity platform.”*(Nu Skin Enterprises 2022)



And company's mission is: *“To be a global force for good by empowering people to improve lives with innovative products, rewarding opportunities and an enriching culture.”* (Nu Skin Enterprises 2022)

Nu Skin operates in approximately 50 markets across Asia, the Americas, Europe, Africa and the Pacific. The company pays out about 40% of its revenue as sales compensation. And it has a very sophisticated commission system.

One of the company's most significant achievements is the patented ageLOC component, which is part of most NuSkin products. The ageLOC piece focuses directly on the source of ageing and gene expression. Simply put, the ageLOC feature is responsible for the uniqueness of Nuskin products and helps to preserve the young look of the customers using the products.

## **4.2 The Position of Nu Skin on the Stock Exchange Market**

Nu Skin Enterprises has been listed on the New York Stock Exchange since 1996. From 1996 to 2022 (3.2.2022), companies' stocks increased 70.23. The following circumstances may be given in the Nu Skin annual report, which may affect stock price developments (Nu Skin Enterprises 2020):

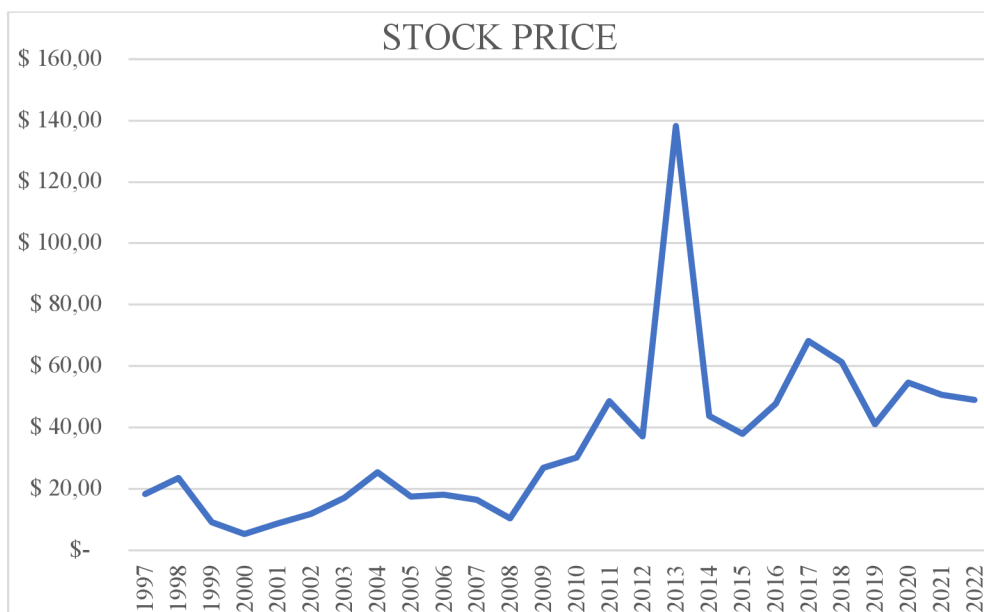
- *fluctuations in our operating results*
- *government investigations of our business*
- *trends or adverse publicity related to our business, products, industry, or competitors*
- *the sale of shares of Class A common stock by significant stockholders*
- *demand, and general trends in the market, for our products*
- *acquisitions by us or our competitors*
- *economic or currency exchange issues in markets in which we operate*
- *changes in estimates of our operating performance or changes in recommendations by securities analysts*
- *speculative trading, including short selling and options trading; and*
- *general economic, business, regulatory and political conditions.*

As we can see in the graph below, the company had a striking increase in share price in 2013. The reason was the introduction of a new TR90 product, which is a breakthrough weight management and body shaping system. *“The TR90® weight management and body shaping system limited-time offer (lto) generated approximately \$550 million in sales, making it the largest product launch in our company's history”* (Nu

Skin Enterprises 2013). Another factor leading to the massive increase in stock price in 2013 was a massive growth of annual revenue by 148% in Greater China, where. This occurrence shows the impact of presenting creative innovation available on the yearly income and stock cost. It tends to be subsequently accepted that it can reoccur later on if the organization could put resources into exploration and advancement of its items and advances.

The beginning of 2014 was demanding for the company because of complications with their business in China. There were negative media stories and the company was sanctioned by the Chinese government. These actions included the suspension of business promotional meetings and the acceptance of applications for new direct sellers and sales employees. Nu Skin Enterprises accepted these sanctions and faced no further problems after that

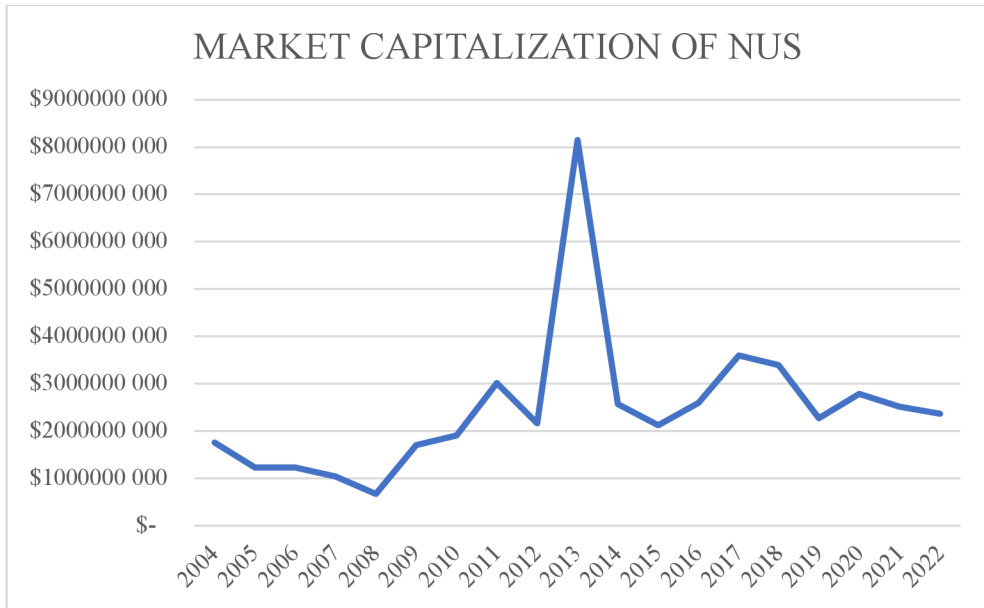
Figure 2: Shares Development from 1997 to 2022



Source: Own processing based on data from macrotrends.com

As of March 2022, Nu Skin has a Market Cap of \$2.32 Billion. This Makes Nu Skin the World's 3309th valuable company by Market Capitalization. The lowest value was \$0.67 Billion in 2008. On the other hand, the highest value was \$8.15 Billion in 2013. It is clear from the graph that Market Capitalization has had an increasing tendency since 2008.

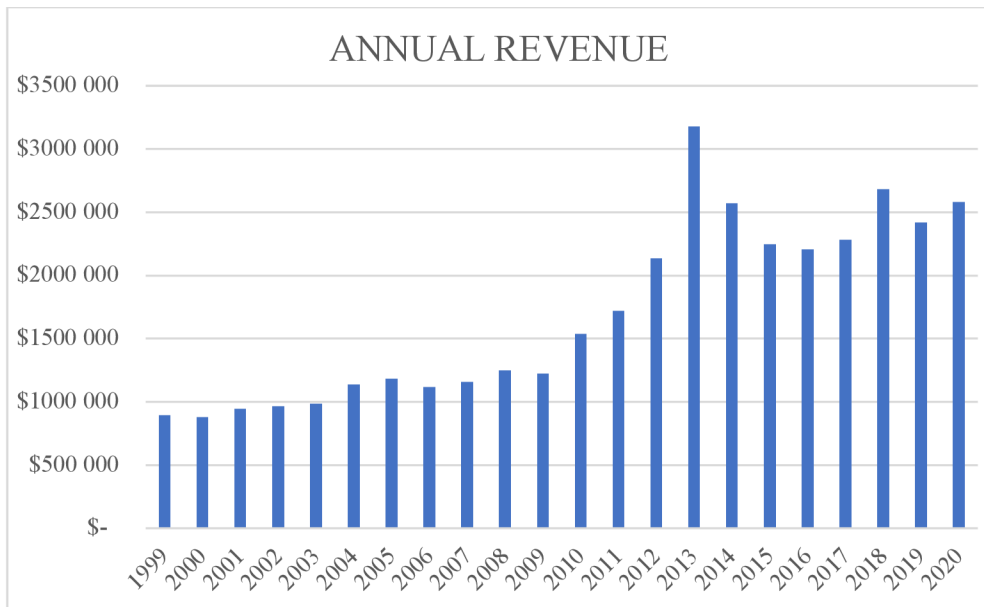
Figure 3: Market Capitalization of Nu Skin Enterprises



Source: Own processing based on data from companiesmarketcap.com

Nu Skin Enterprises raises millions of dollars in annual revenue. The graph below shows that the annual revenue has increased steadily between 1999 and 2020. As a result, the company ranks among the best network marketing companies.

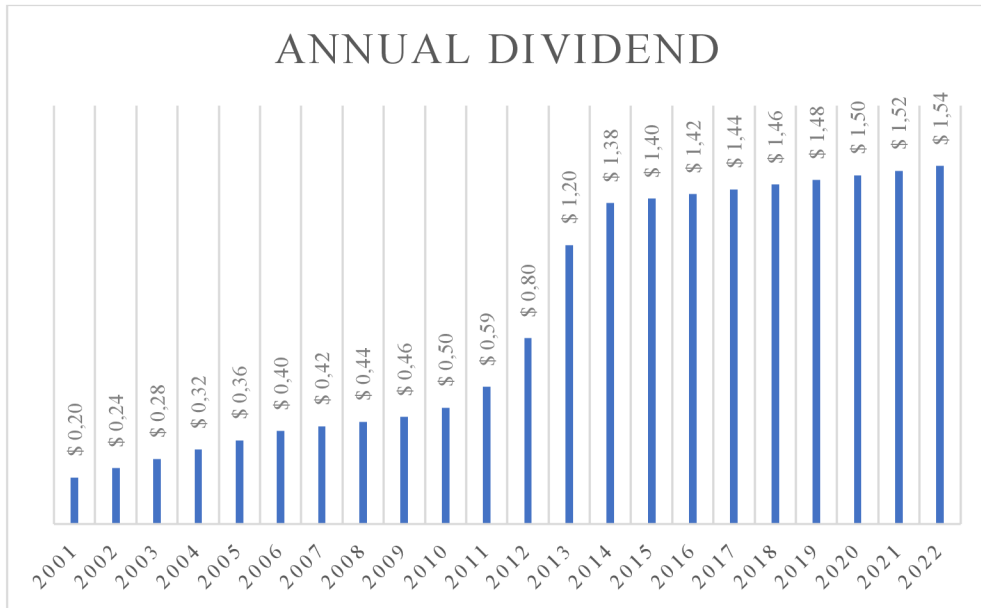
Figure 4: Annual Revenue of Nu Skin Enterprises



Source: Own processing based on data from Nu Skin's annual reports

Since 2001, dividends have been paid. As shown in the graph below, dividends have a growing tendency. The year 2022 is projected in the chart.

Figure 5: Paid Annual Dividend



Source: Own processing based on data from finance.yahoo.com

### 4.3 The Most Profitable Product

Nu Skin Enterprises focuses on two main areas. personal care and wellness. The most advised product is from personal care. It also corresponds to the fact that in the last 6 years this area makes up an average of 60% of Annual Revenue.

As can be seen in the table number 2. Personal Care has a larger representation in Annual Revenue than wellness.

Table 2: Revenue by Product Category

| Revenue by product category |               |          |       |           |
|-----------------------------|---------------|----------|-------|-----------|
| U.S. dollars in millions    |               |          |       |           |
| Year                        | Personal care | Wellness | Other | Total     |
| 2015                        | 1,363.5       | 877.9    | 5.6   | \$2,247.0 |
|                             | 60.7%         | 39.1%    | 0.2%  | 100%      |
| 2016                        | 1,308.2       | 892.7    | 6.9   | \$2,207.8 |
|                             | 59.3%         | 40.4%    | 0.3%  | 100%      |
| 2017                        | 1,456.4       | 817.2    | 5.5   | \$2,279.1 |
|                             | 63.9%         | 35.9%    | 0.2%  | 100%      |
| 2018                        | 1,659.7       | 921.3    | 98.0  | \$2,679.0 |
|                             | 62.0%         | 34.4%    | 3.6%  | 100%      |
| 2019                        | 1,423.5       | 863.1    | 133.8 | \$2,420.4 |
|                             | 58.8%         | 35.7%    | 5.5%  | 100%      |
| 2020                        | 1,491.8       | 922.6    | 167.5 | \$2,581.9 |
|                             | 57.8%         | 35.7%    | 6.5%  | 100%      |

Source: Own processing based on data from Nu Skin annual reports

In 2020 two innovative skin care devices were top-selling products by revenue, the ageLOC Spa systems and ageLOC LumiSpa skin treatment and cleansing device.

geLOC personal care products accounted for 50% of the personal care category and 29% of total revenue in 2020.(Nu Skin Enterprises 2020)

In the area of wellness, there are three most detailed products: LifePak - nutritional supplement, ageLOC Youth - nutritional supplement and ageLOC TR90 - weight management and body shape system

Nutritional products accounted for 42% of the wellness category and 15% of total revenue in 2020. (Nu Skin Enterprises 2020)

Finally the most profitable product is ageLOC Spa systems.

#### 4.4 Competitors

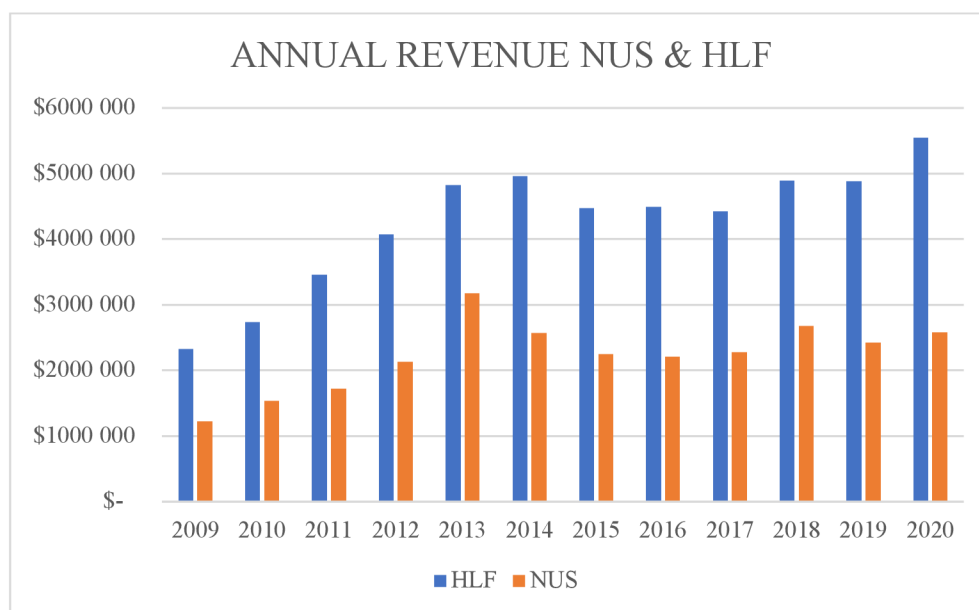
In this chapter, I will focus on comparing Nu Skin Enterprises to Herbalife International and Apple Inc. Herbalife International I chose as a competitive company in Network Marketing and Apple Inc. I chose an innovative company in the technological industry, as Nu Skin Enterprises focuses on innovative technology in the beauty industry.

As indicators, I chose annual revenue, stock price and market capitalization. At Apple Inc. I will compare percentage development market capitalization, since the size of the companies is very different.

#### 4.4.1 Herbalife International Inc.

I have chosen the Herbalife International Inc. as a competitive company mostly because it is also a network marketing company and some of its products are similar in nature to Nu Skin's products. Herbalife International was founded in 1980 and operates in the area of nutrition. It develops weight reduction products, food supplements, sports nutrition, and cosmetic products. Compared to Nu Skin Enterprises, they do not develop innovative technologies, but as one of the few companies based on direct sales their shares are negotiable to NYSE (New York Stock Exchange). Therefore, I decided to compare these two companies from an investment perspective. The first indicator I chose was Annual Revenue for comparison. As seen on the graph below, Herbalife International Inc. (HLF) has historically higher Annual Revenue than Nu Skin Enterprises (NUS). There were 9,900 employees in Herbalife International Inc. in 2020, while Nu Skin Enterprises had a total of 5,000 employees in 2020. Which also indicates the size of the individual companies.

Figure 6: Comparison of Annual Revenue Nu Skin Enterprises and Herbalife International

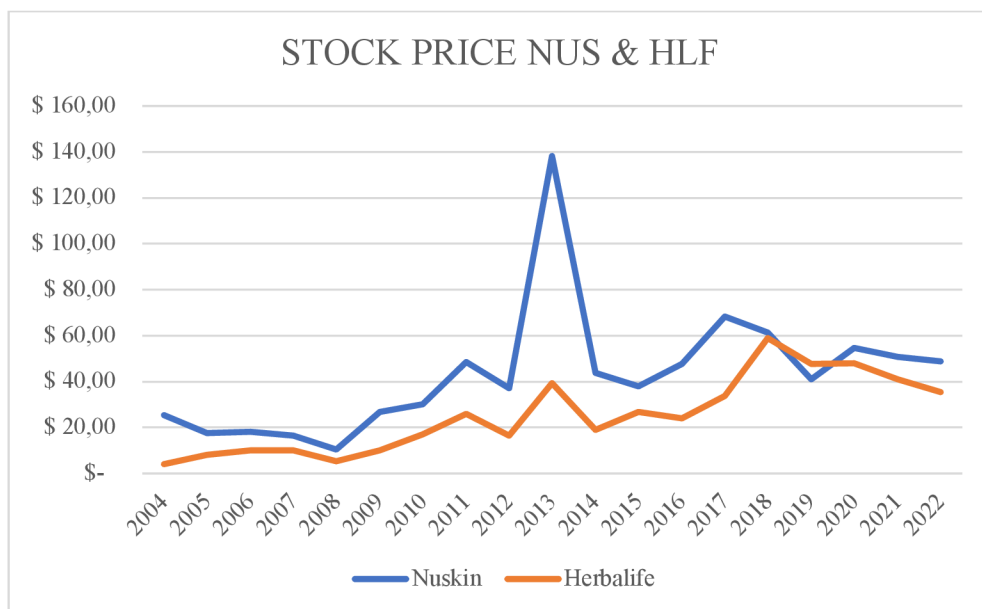


Source: Own processing based on data from Nu Skin's and Herbalife's annual reports

The second indicator I chose to compare both companies is the Annual Stock Price. The graph below shows that Nu Skin Enterprises has a higher share price than Herbalife

International Inc. The data obtained from both companies also show that the industries in which both companies operate have developed very similarly. The highest value of the shares of Nu Skin was in 2013 when its value climbed to \$138.22. At the same time, Herbalife's highest value was in 2018 at \$58.95. Even though Herbalife International Inc. exhibits higher annual revenue, the size of the company is significantly larger and company shares are lower than Nu Skin Enterprises. It is also interesting that Nu Skin Enterprises has paid out continuous dividends since 2001. While Herbalife International Inc. paid out dividends only in 2007-2013. From the point of view of the share value, the Nu Skin Enterprises can be thus considered to be a more successful company than Herbalife International.

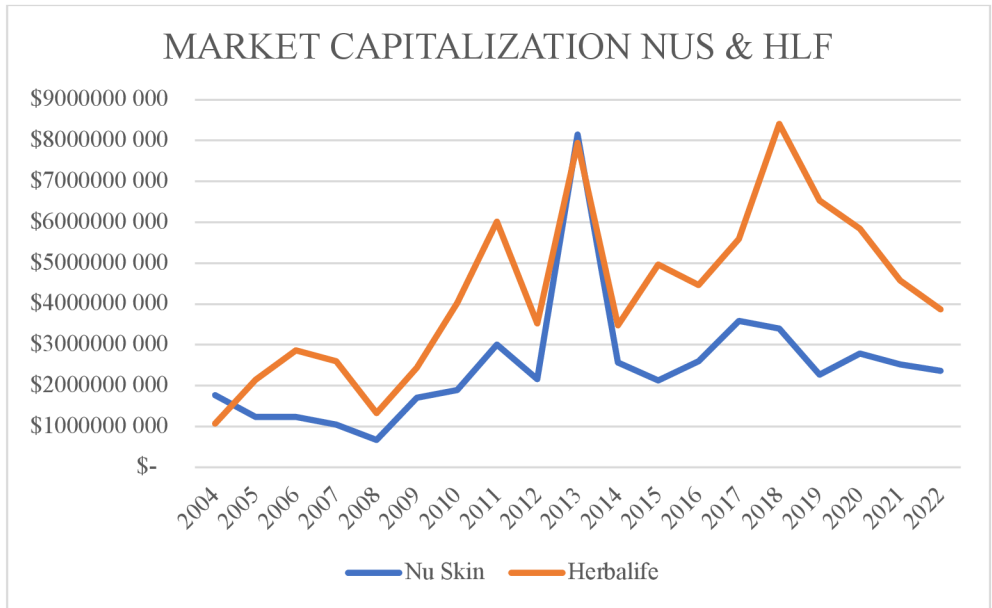
*Figure 7: Comparison of Annual Stock Price Nu Skin Enterprises and Herbalife International*



Source: Own processing based on data from finance.yahoo.com

The third indicator I used to compare the company is Market Capitalization. This value indicates how much a company is worth on the market. From the graph below, we can observe that although the above-mentioned share price of Nu Skin was higher almost all the time, Market Capitalization tells the fact that Herbalife International has a higher value on the market than Nu Skin Enterprises. Only in 2004 and 2013, the value of Nu Skin Enterprises was higher than Herbalife International.

Figure 8: Comparison of Market Capitalization Nu Skin Enterprises and Herbalife International



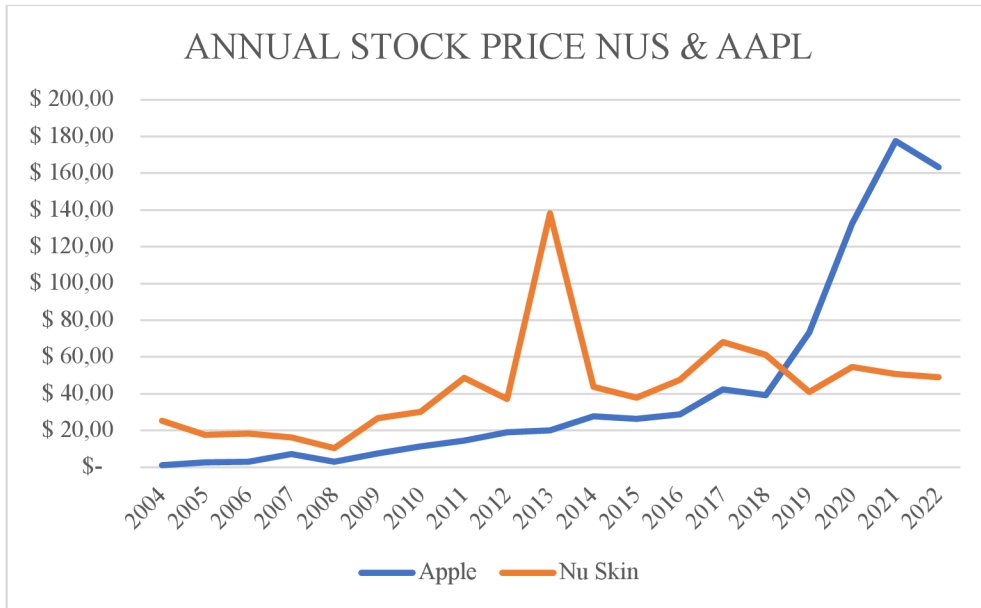
Source: Own processing based on data from companiesmarketcap.com

#### 4.4.2 Apple Inc.

The second company I decided to compare Apple Inc. Apple is a very innovative technology company. Although it does not operate in the beauty industry, just like Nu Skin Enterprises, it is a leader in its field. The first indicator I compared is the Annual Stock Price. As we can see on the graph below, until 2018, the Annual Stock Price of Nu Skin Enterprises was higher than that of Apple Inc. Of course, the size of individual companies is entirely different, but in spite of that, the price of Nu Skin shares was higher for many years.



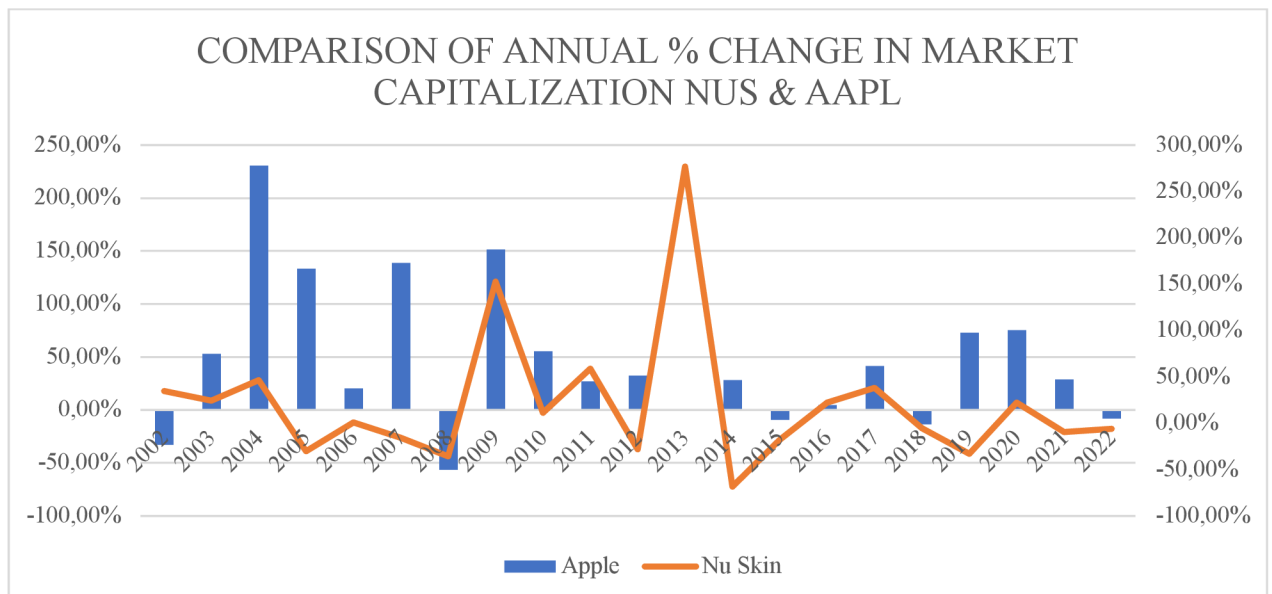
Figure 9: Comparison of Annual Stock Price Nu Skin Enterprises and Apple Inc.



Source: Own processing based on data from finance.yahoo.com

The more important indicator to compare these two companies is Market Capitalization. In the graph below, I compared Annual percentage Change in Market Capitalization of both companies. Since the Apple’s Capitalization Market is many times higher I choose to compare Annual percentage Change. From the graph, it can be seen that both companies had a high percentage increase in 2009 and in 2020. In these periods, the global financial crisis took place, and this fact indicates that both companies operated very well in the crisis.

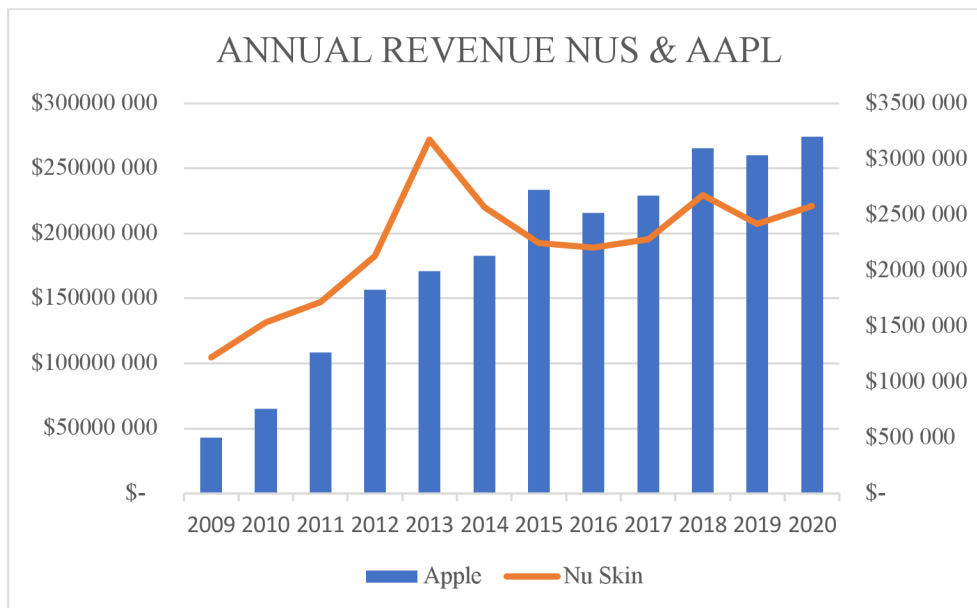
Figure 10: Comparison of Annual % Change of Market Capitalization Nu Skin Enterprises and Apple Inc.



Source: Own processing based on data from companiesmarketcap.com

The third indicator I decided to compare is the Annual Revenue of individual companies. As I wrote above, the size of the companies and the industries in which they operate are very different. But both are leaders in their field and focus on innovative technology. On the graph below, we can see the comparison of Annual Revenue of both companies. Both companies have seen an increase in annual revenue since 2009.

Figure 11: Comparison of Annual Revenue Nu Skin Enterprises and Apple Inc.



Source: Own processing based on data from Nu Skin's and Apple's annual reports

#### 4.5 Future of the Nu Skin Enterprises

In this chapter of my bachelor thesis I focus on the investment strategies, future development in sustainability as well as the fulfillment of the vision, which the company has until 2025. I will give the direction to which the company wants to issue and evaluate whether the company has the potential to grow.

Nu Skin Enterprises through Rhyz (Rhyz is strategic arm of Nu Skin Enterprises) invests in the controlled environment and develops agriculture technologies like Grōv technologies. Sustainability is very important for this company. For example, they made this commitment: “All packaging recycled, recyclable, reusable, reduced or renewable by 2030” (Nu Skin Enterprises 2022). On this commitment they work hard and as the first beauty company launched the Eco-pak, an innovative bioplastic that uses sugar cane. Last year they made sustainable changes of the packaging of their top 20 products. To complete scoring all products will change their packaging by 2023.

In order to fulfill its vision - *“To become the world’s leading innovative beauty and wellness company, powered by our dynamic affiliate opportunity platform.”*(Nu Skin Enterprises 2022), the company employed 3 Key Strategic Imperatives:

1. Introduce EmpowerME personalized beauty & wellness strategy with iO connected devices (Nu Skin Enterprises 2022).
2. Accelerate our Affiliate-powered social commerce business model (Nu Skin Enterprises 2022).
3. Delight our customers with our integrated digital ecosystem(Nu Skin Enterprises 2022).

EmpowerMe is a connection technology with digital applications. In 2022 Nu Skin Enterprises plans to launch the first two IoT connected beauty devices - LumiSpa iO and ageLOC body iO. These input and output devices are designed with a single ability to provide a consumer with deeper insight into their skincare and body, by collecting user data, which are paired with preferential and purchasing data accessible via a digital application. This entire system will facilitate a deeper understanding of customer’s needs.

Since which year, the Influencer Marketing transforms the way companies address their consumers. It is a very effective way to replace traditional e-commerce. It could be said that this is a very positive development for Nu Skin Enterprises, because the concept of direct sales on which Nu Skin Enterprises is based, correlates with the influencer marketing and a massive increase in influencer marketing is predicted in future years. Nu Skin Enterprises invests in new technologies to help affiliates build their social business more effectively with features like “one-click, post and share”. In the second part of the 2022, the company will introduce "Vera" - consumer app and "Stella" - affiliate app. Nu Skin Enterprises expects to spend more than \$500M to fulfill their vision of 2025. They cooperate with Infosys, which is the global leader in mobile E-Commerce.

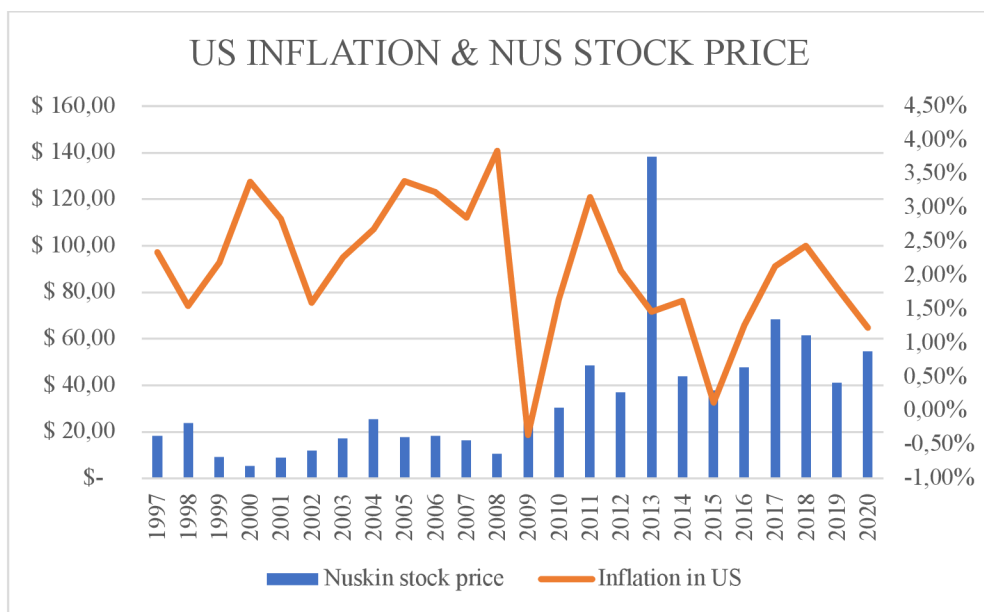
#### **4.6 Global Fundamental Analysis**

In this section, I focus on two global fundamental analysis indicators. These are inflation and GDP. I will examine whether these two factors affect the price of the shares of Nu Skin Enterprises.

#### 4.6.1 Inflation

The relationship of inflation to shares is inverse, but it is not strong. This assumption also corresponds to the correlation coefficient of analysed shares, based on - 0.3. I calculated it from the Annual Stock Price NUS and US inflation data over the past 23 years. The graph below shows that inflation reached low values in 2009 (the reason was the financial crisis) and 2015 (a massive decline in oil prices and the end of quantitative release at the end of 2014). Inflation on the company's shares does not have a strong influence.

Figure 12: Inflation in the US and Annual Stock Price NUS

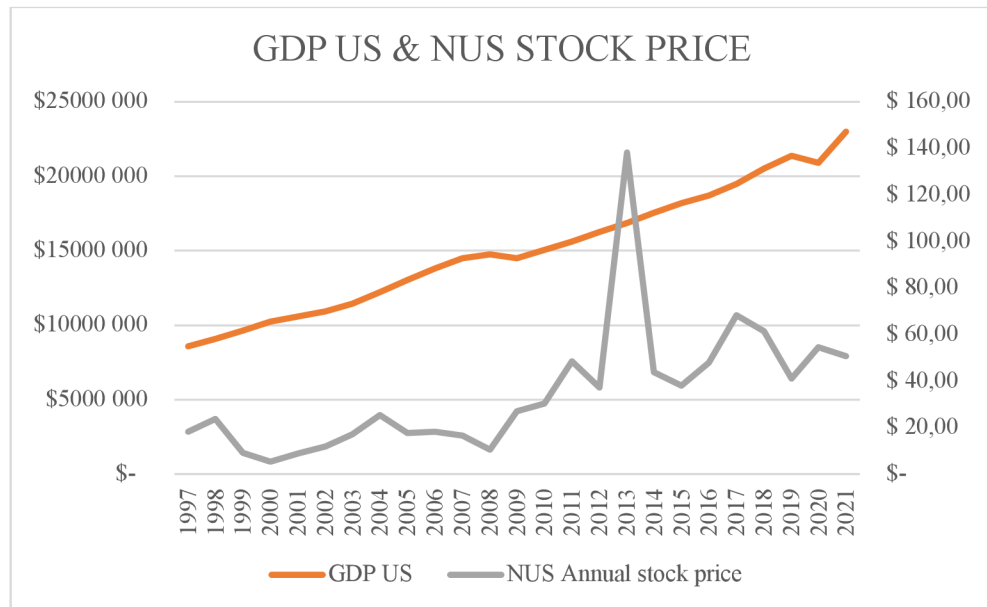


Source: Own processing based on data from finance.yahoo.com and macrotrends.net

#### 4.6.2 The Real Output of the Economy

In the theoretical part, I discussed the GDP's dependence on the development of the shares. The theory states that the correlation coefficient between GDP and exchange rate development is positive. This means that a positive relationship should apply, which would show that the share price will rise as the economy grows. In the graph below this dependence can be observed. It also confirms the value of the correlation coefficient, which is 0.6. The chart shows the development of Annual Stock Price and GDP in dollars from 1997 to 2021.

Figure 13: GDP in the US and NUS Annual Stock Price



Source: Own processing based on data from [finance.yahoo.com](https://finance.yahoo.com) and [countryeconomy.com](https://countryeconomy.com)

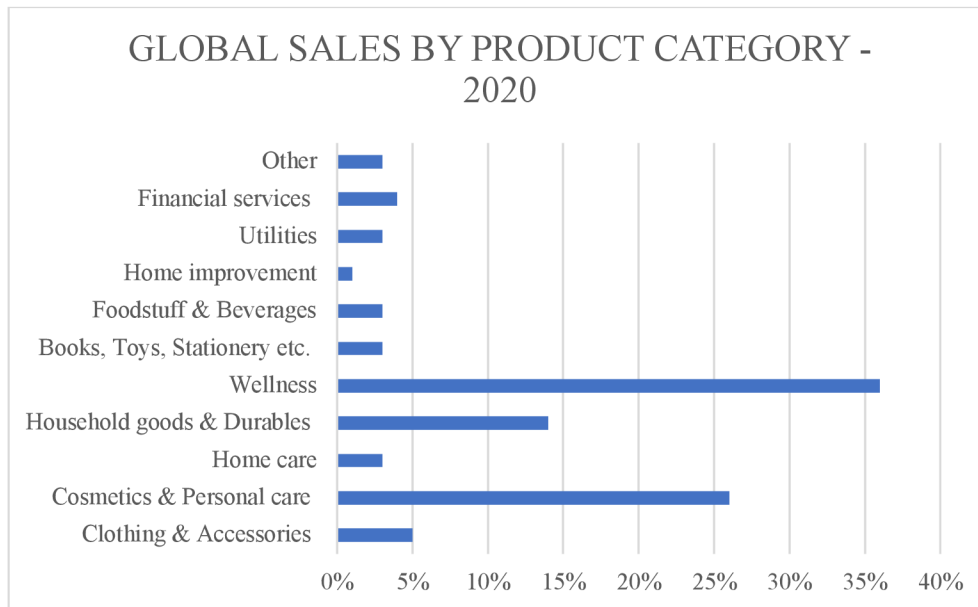
#### 4.7 Industry analysis

In this chapter, I focus on integrating the company into the relevant sector and analyzing whether this company has potential to grow in this industry.

According to [Finance.yahoo.com](https://finance.yahoo.com) and [Finviz.com](https://finviz.com), Nu Skin Enterprises ranks into the Consumer Defensive and Industry Household & Personal Products sector. The company could be also included in the Direct Selling Industry. Direct selling is a highly personal industry that thrives on robust relationships between companies, independent sales representatives, consumers and suppliers (WFDSA).

Nu Skin Enterprises focuses mainly on Wellness and Cosmetics & Personal Care. It is clear from the World Federation of Direct Selling Associations chart that these two areas have the most significant representation on the global scale. This can conclude that Nu Skin Enterprises has the potential in this sector.

Figure 14: Direct Selling Global Sales by Product Category



Source: Own processing based on data from wfdsa.org

## 4.8 Company Analysis

In this part of my bachelor thesis, I focus on analyzing Nu Skin Enterprises, using Price Ratio Models and cashflow model. I also examine whether according to the internal value of the share, the share is undervalued, overestimated, or properly evaluated.

### 4.8.1 The P/E Ratio Method

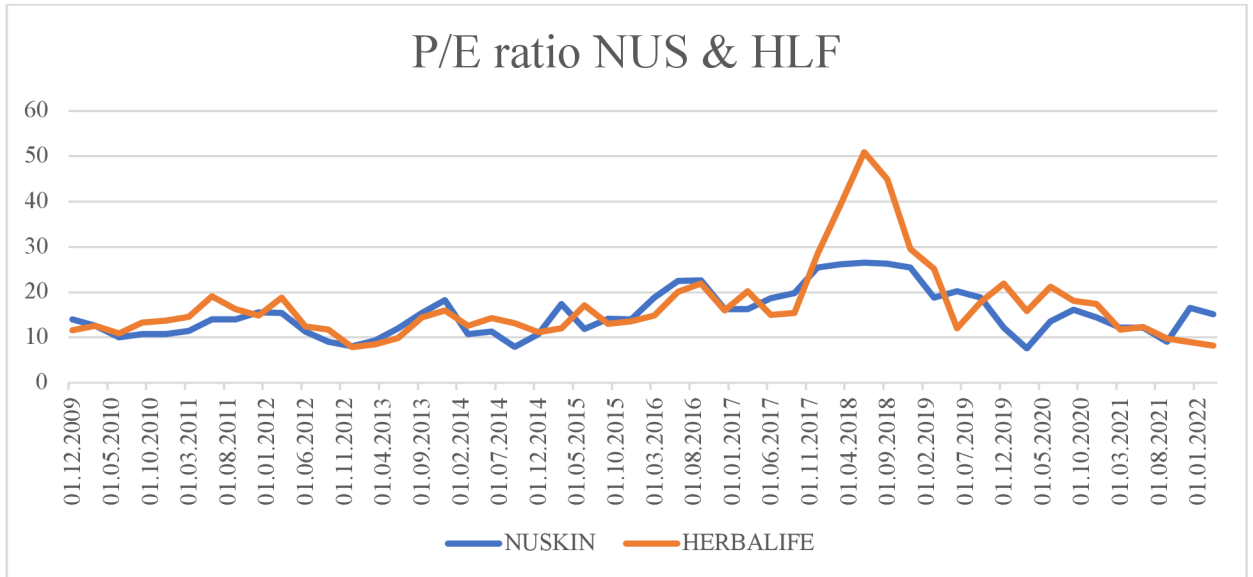
The PE Ratio can be viewed as the number of years it takes for the company to earn back the price which shareholders pay for the stock. In this case, Earnings Per Share in 2021 was \$2.84 and the stock is traded at \$44.885 (1.3.2022). The **P/E ratio is 15.80**. Therefore, it takes more than 15 years for the company to earn back the \$44.885 that shareholder paid for its stock, assuming the earnings stays constant over the next 15 years.

Yet earnings never stay constant. If a company grows, it takes fewer years for the company to earn back the price shareholders pay for the stock. If a company's earnings decline it takes more years. That means lower P/E stocks are more attractive for a shareholder than higher P/E stocks.

In the graph below, I compared the P/E Ratio of Nu Skin Enterprises with Herbalife. The graph shows that the P/E ratio of both companies has developed relatively similarly, but in the long term, NU Skin' Enterprises P/E ratio is lower. 33.46 was the

highest value for the P/E ratio for the last 5 years was on 4.6.2018. On the contrary, the lowest was on 18.3.2020 the 4.026.

Figure 15: Comparison of P/E Ratio Nu Skin Enterprises and Herbalife International



Source: Own processing based on data from macrotrends.com

The internal stock value can be calculated according to the following formula:

$$V_0 = (P/E)_N * E_1 \quad (14)$$

Web Nasdaq.com states that EPS Forecast 2022 will be \$4.21. As already mentioned P / E ratio of Nu Skin Enterprises is 15.80. Thus, the internal value of the share is **\$68.098** according to the P / E method. This means that the internal value is higher than the current course, and the shares are underestimated.

$$V_0 = 15.80 * 4.31 = \$68.098 \quad (15)$$

If the internal value of the stock is higher than the current stock rate. It means that it is underestimated, and from the investor perspective it is recommended to buy shares.

#### 4.8.2 The P/BV Ratio Method

The Price-to-Book ratio is a financial ratio used to compare a company's market price to its Book value per share. Nu Skin Enterprises' share price is \$45.29 (1.3.2022). Nu Skin Enterprises' Book value per share for the quarter that ended in Dec. 2021 was \$18.29. Hence, Nu Skin Enterprises' **P/B Ratio** is **2.48**.

The internal value of the P / BV method is calculated according to the following formula:

$$V_0 = (P/BV)_N * BV_1 \quad (16)$$

Book Value Per Share Growth Rate During Past 12 Months IS 4.10%. Thus, the Internal Value according to the P / S Ratio method is **\$47.219**, which means that the share is properly evaluated.

$$BV_1 = 18.29 * \quad (17)$$

$$V_0 = 2.48 * 19.04 = \$47.219 \quad (18)$$

If the internal value of the stock is similar to the current stock rate, it means that the stock is correctly rated and from the Shareholder point of view is recommended to keep this share.

#### **4.8.3 The P/S Ratio Method**

The Price-to-Sales ratio is a financial ratio used to compare its market price to its revenue per share.

Nu Skin Enterprise's share price is \$44.885 (1.3.2022) and Nu Skin Enterprises' revenue per share for the trailing twelve months (TTM) ended in Dec. 2021 was \$52.39. Hence, Nu Skin Enterprises' **P/S Ratio** is **0.86**. Nu Skin Enterprises has shown predictable revenue and earnings growth.

#### **4.8.4 Cashflow Model**

The weighted average cost of capital (WACC) is the rate at which a firm is projected to pay all of its security holders on average to finance its assets. The firm's cost of capital is frequently referred to as the WACC. In general, debt and equity are used to fund a company's assets. WACC is the average of the costs of these sources of funding, weighted by their relative importance in the given situation. We can see how much interest the corporation has to pay for each dollar it finances using a weighted average.

#### **Weights**

Equity (E) has a market value of \$2,309,847,000. To calculate the market value of the debt, I used the book value of the debt. Simplify it by adding the latest two-year average short-term debt and capital lease obligations and long-term debt and capital lease obligations. As of December 2021, Nu Skin's average short-term debt and capital lease obligations for the most recent two years were \$107.954 million, and its average long-term debt and capital lease obligations for the most recent two years totaled \$394.127 million.



The total book value of Debt (D) is \$502.081 million. Weight of equity (E) =  $E/(E+D) = 2309.847/(2309.847 + 502.081) = \mathbf{0.8214}$

a. Weight of debt (D) =  $D/(E+D) = 502.081/(2309.847 + 502.081) = \mathbf{0.1786}$

### Cost of Equity

Cost of Equity ( $r_e$ ) = Risk-free rate of return + Beta of Asset \* (Expected Return of the Market - Risk-Free Rate of Return) (19)

a. I used 10-year treasury constant maturity rate as the risk-free rate of return. The current risk-free rate is 1.99000000%.

b. Beta is the sensitivity of the expected excess asset returns to the expected excess market returns. Nu Skin Enterprises's beta is 1.33.

c. expected return of the market - risk-free rate of return is 6%

Cost of equity =  $1.99000000\% + 1.33 * 6\% = \mathbf{9.97\%}$  (20)

### Cost of Debt

I used last fiscal year end Interest expense divided by the latest two-year average debt to get the simplified cost of debt.

As of Dec. 2021, Nu Skin Enterprise's interest expense (positive number) was \$0. Its total Book value of Debt (D) is \$502.081 Mil.

Cost of Debt =  $0/502.081 = \mathbf{0\%}$  (21)

### Average Tax Rate

I used latest two-year average tax rate to do the calculation. The calculated average tax rate is limited to between 0% and 100%.

The latest two-year average tax rate =  $\mathbf{30.985\%}$  (22)

Nu Skin Enterprises's Weighted Average Cost of Capital (WACC) for 3.1.2022 is calculated as:

$$WACC = \frac{E}{E+D} r_e + \frac{D}{E+D} r_d (1 - t) \quad (23)$$

$$WACC = \frac{2309.847}{2309.847+502.081} 9.97\% + \frac{502.081}{2309.847+502.081} 0\%(1 - 30.985\%) \quad (24)$$

$$WACC = \mathbf{8.19\%}$$

The weighted average cost of capital for Nu Skin Enterprises is currently 8.19%. Nu Skin Enterprises delivers greater returns on investment than it costs the company to raise the necessary money. It's making a lot of money. A company's worth will rise as growth increases if it expects to generate positive excess returns on additional investments in the future.

## **5 Results and Discussion**

### **5.1 Company Analysis**

In the first part of my practical part, I evaluated the development of the company from the perspective of Annual Revenue, which has been shown that since 2014 exceeds \$2 millions and ranks among the top 10 direct sales companies. Annual Stock Price rose since 2008 by \$35,51 and Market Capitalization has been higher by \$1.7b since 2008. Since 2001, the company has been paying dividends, which are higher every year.

Overall, the company is in long-term growth and positive developments can be expected in the market.

The most profitable product for the company is ageLOC Spa systems and ageLOC LumiSpa systems. Which are personal care categories and represent 50% of Annual Revenue of this category.

### **5.2 Competitors**

Nuskin Enterprises is a smaller company compared to Herbalife International, but their market developments are similar. In 2013, however, Nu Skin Enterprises had a larger market Capitalization than Herbalife International. Market Capitalization of Herbalife International has fallen rapidly since 2018, while Nu Skin Enterprises maintains relatively stable development.

I compared Nu Skin Enterprises with Apple Inc. because both companies are leaders in innovative technologies. Of course, the size and value of companies are at a completely different level, but I focused on percentage Development of Market Capitalization of both companies. Apple Inc. had the largest percentage jump in 2004, with the year-on-year increase of 230.6%, while Skin Enterprises had the highest year-on-year increase in 2013, which was 276%.

### **5.3 Future of the Nu Skin Enterprises**

In this chapter I analyzed the direction in which the company will go for the future. This indicates that the company depends on its development and does everything to remain a leader in their field. It is evident that the time changes and so does the way of promoting and selling products, which gives Nu Skin Enterprises a great advantage because they focus on influencer marketing, which is currently in great growth. The company invests

many resources in research and development of new technologies, which also indicates positive development

#### **5.4 Global Fundamental Analysis**

In the global fundamental analysis, I focused on inflation and GDP on the development of Nu Skin Enterprises. After evaluating data and calculating Correlation, I concluded that Inflation does not have a strong influence on stock Nu Skin's stock price, because the Correlation is -0.3. Conversely, GDP has a relatively strong impact on the development of shares, as the correlation is 0.6.

In Industry Analysis, I focused on evaluating the direct sales sector, mainly on the largest categories of products by sales. In this analysis, I concluded that Nu Skin Enterprises operates in the right sector, since Wellness and Personal Care have the largest representation in Global Sales.

In the fundamental analysis of the company, I focused on calculating P/E Ratio and comparing it to Herbalife International. Overall, the company Nu Skin Enterprises has an average lower P/E ratio than the Herbalife International and puts it up to a better position. After calculating the internal value according to the P/E method, I found out that the shares are underestimated and the purchase of this share would be recommended by investorship. After calculating the internal value according to P/B Ratio, I found out that the shares are correctly rated and investors would therefore be recommended to keep the shares. The weighted average cost of capital is currently 8.19%. Nu Skin Enterprises delivers greater returns on investment than it costs the company to raise the necessary money.

## 6 Conclusion

My bachelor thesis aimed to process the economic analysis of Nu Skin Enterprises and, based on the identified data, decide whether it is appropriate to invest in the company and work with it as their distributor.

In the theoretical part of my bachelor thesis, I have chosen fundamental analysis as a basis for my thesis because it is considered the most popular and comprehensive analytical approach.

In the practical part, I focused on the historical development of Nu Skin Enterprises. I found out that in 2013 there was a striking increase in Annual Revenue and the stock price. The reason was the new product of ageLOC TR90 and the increase in distributors in Greater China, where annual revenue was 148%. This incident clearly shows the effect of introducing innovative technology on the market on the annual revenue and stock price. It can be therefore assumed, that it can happen again in the future if the company would continue to invest in research and innovation of its products and technologies.

In 2014, thanks to the adverse interest of the media, the company faced a more challenging period, and the annual stock price fell from \$138.22 to \$43.70, but it was still more than in 2012. I also found out that since 2001, the company has been continuously paying dividends which are higher every year. That is one of the reasons why it is appropriate to cooperate with the company as its distributor. Overall, the value of the stocks of the company has a growing tendency and therefore it is appropriate to invest in it.

In the following chapter, I evaluated the status of Nu Skin Enterprises compared to Herbalife International. Herbalife International is also a company that operates in direct sales. Even though the size of Herbalife International is nearly twice bigger in terms of number of employees, the Market Capitalization of Nu Skin Enterprises has been getting very close to that of Herbalife International over the past 8 years. International. Furthermore, Nu Skin Enterprises has paid continuous dividends since 2001 and it therefore pays to invest in this company.

I also focused on the company's future development, which in my opinion, is very positive. Nu Skin Enterprises is in the right sector and invests in the innovation of its

products and technologies. At the same time, it is not indifferent to environmental sustainability. All these factors are favorable for potential distributors.

In terms of fundamental analysis, I calculated that inflation does not affect the development of Nu Skin Enterprises but that the GDP has a relatively significant impact on its development. By Price Ratio Methods, I analyzed that the company has a relatively low P/E ratio, which puts it into an advantageous position. Furthermore, compared to Herbalife International Nu Skin's average long term P/E ratio is lower. Overall, these indicators point in favor of investing into Nu Skin Enterprises.

My recommendation for investing in this company is positive, and I think the company has the potential for high growth in the future. From the perspective of cooperation as a distributor for this company, I also need to say that its direct sales activity is very positive and pays the most percentage of the turnover with its distributors compared to other companies operating in direct sales. Notwithstanding that, the company introduces almost every two years new technology or product on the market, which indicates repeatable business opportunities.

In conclusion I would like to point out that this topic is pervasive and could be analyzed in much greater detail, which is way beyond the scope of this bachelor thesis. For example, it could focus more on the development of the company in the future and its new products that are introduced to the market. Furthermore, individual stock analysis could be performed, which would more precisely determine the company's market position. These are topics for further research.

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