# UNIVERSITY OF ECONOMICS, PRAGUE 

## MASTER'S THESIS

# UNIVERSITY OF ECONOMICS, PRAGUE 

 FACULTY OF BUSINESS ADMINISTRATIONMaster's Field: CEMS International Management


Title of the Master's Thesis:

## Influence of commodity costs on the price of FMCG products

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## Declaration of Authenticity

I hereby declare that the Master's Thesis presented herein is my own work, or fully and specifically acknowledged wherever adapted from other sources. This work has not been published or submitted elsewhere for the requirement of a degree programme.

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## Title of the Master's Thesis

Influence of commodity costs on the price of FMCG products


#### Abstract

The goal of this thesis is to provide a reader with a comprehensive outlook on the cost-pricing process in a real FMCG company. Firstly, the thesis concentrates on the theoretical background of cost methodologies and pricing strategies from a perspective of a private firm. Secondly, the thesis presents a tool, which calculates the reflection of the change in the commodity cost on the shelf price of a good. Thirdly, statistical testing is applied in order to identify if the model could correlate with reality based on historical data. In this part the thesis discusses the limitations of the model and gives more real life examples of how the price is set, besides the commodity influence. Thanks to it, a reader will be able to draw conclusions from the given information and deeper understand the complexity of the FMCG market industry.


## Keywords:

FMCG, costing methodologies, pricing strategies, C-P Model, P value testing, commodities, shelf price

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## AbBREVIATIONS

| ABC | Activity-Based Costing |
| :--- | :--- |
| C-P | Commodity-Price |
| CEE | Central \& Eastern Europe |
| CSR | Corporate Social Responsibility |
| D\&A | Depreciation \& Amortization |
| FMCG | Fast Moving Consumer Goods |
| HR | Information Technology |
| IT | Procter \& Gamble |
| P\&G | Profit \& Loss |
| P\&L | Promo Depth Discount |
| PDD | Point Of Sale |
| POS | Research \& Development |
| R\&D | Return On Investment |
| ROI |  |

## Introduction

Fast Moving Consumer Goods (FMCG) are used by many people around the world every day, in every country. From the luxurious skin products to the cheap chewing gums, these products influence our lives in many ways. Therefore, it is clear that purchasing such goods affects the budget of an average person significantly, as it is nearly impossible to imagine living without these products.

When a person frequently buys certain goods, he or she notices price deviations that happen from time to time. Sometimes it is possible to explain why the price has changed, for example due to the commodities price increase or decrease. In Europe, for instance, the prices for butter have been declining for almost two years now. This happened because of the Russian embargo and surplus of milk on the European market.

In other situations, the price change of a good is difficult to explain by the commodity issue. Hence, people cannot tell if it happened because of competition, marketing strategy or something else.

The aim of this thesis is to give a comprehensive outlook on the reasons why the shelf price of a good changes. Predominantly, the paper concentrates on the connection (if there is some) between the commodity cost and shelf price. However, the picture would not be complete without practical examples of other reasons why big FMCG companies change their pricing strategies.

The first chapter of this thesis is dedicated to the introduction of the FMCG industry to a reader. Hence, here it is possible to find basic information about the main players on the market as well as retailers. The first chapter also describes modern strategies, which companies can implement in order to be successful. Another topic discussed in the first chapter is the description of the trends from the side of consumers and technology evolution. Both of these
topics may help to understand FMCG companies' motivation when it comes to making certain business decisions.

In the second chapter of the thesis, cost classification and calculation methods are described. This theoretical part helps a reader to understand the basics of a firms operations and aims of the business. Thanks to it, a reader will be able to distinguish between different types of cost models such as classic ones or modern.

The third chapter of the thesis is dedicated to the firm's pricing strategies. This theoretical part can as well give a basic outlook on the different price methodologies, which can benefit a firm and help to achieve its goals. The third chapter also shows the motivation to use a certain price strategy depending on the product type or the industry of the business.

Chapter four starts the practical part of the thesis. Here, the so-called Commodity-Price (C-P) model is presented. It describes an Excel tool that was developed in order to calculate how the change in the price of a dominant commodity of the good affects its shelf price. This model was possible to be made thanks to the internal sources (such as P\&L) of an FMCG company and an input from an R\&D department in order to find out the commodities cost hierarchy. A sample of eight different product categories was taken in order to test the price change result that the model gives.

The fifth and final chapter of the thesis is dedicated to the limitations of the CP model. In this part, in order to see if the model is not too idealistic, it needs to be statistically tested by a P value method. P value test will either approve or disapprove the hypothesis that the price of a commodity affects the shelf price of chosen products. Another important characteristic of the fifth chapter is that it describes other factors that may affect the shelf price: such as promotion influence or strategic pricing. Thanks to that, the conclusion about the complexity of the FMCG industry can be made.

## 1. FMCG INDUSTRY PERCEPTION AND TRENDS

This chapter is devoted to the brief description of the FMCG industry as such, its modern perception and new trends in retail. As this thesis is predominantly devoted to the FMCG industry, it is necessary to have a basic overview of it.

FMCG - fast moving consumer goods. By this definition we understand the products that are non-durable in terms of period of usage and usually are sold at lower prices. Another quality of FMCG is its frequent usage by the end consumers and repetitive purchases. As FMCG we can name such products like food (bread, milk, ketchups, ice cream) or drugstore products (shampoos, deodorants, cosmetics). Tobacco and alcoholic beverages as well belong to the FMCG category.

As the biggest FMCG companies, according to the revenues and worldwide presence, we can name Nestle, P\&G, Unilever, PepsiCo etc. (statista.com)

In general, nowadays people tend to perceive Google, Apple, Facebook or Microsoft as the most successful companies. (Thain, 2014) These Internet and technology giants for sure hugely influence international economy, trends and markets. But if we compare their revenues to the FMCG companies' revenues, we would be able to see how well are the "old-school" FMCG firms are still doing. Revenues of Nestle in 2015 were bigger than Microsoft's for instance (100 billion U.S. dollars vs. 93 billion U.S. dollars). And revenues of P\&G were higher than Google's revenues in 2015 ( 83 billion U.S. dollars vs. 74 billion U.S. dollars). (statista.com)

Looking at such successful performance of the FMCG companies, we can tell that in order to keep strong positions worldwide, there should be a constant improvement not only of products themselves, but also in the way the business is done.

FMCG industry as such is a very saturated and competitive market to trade in. Every year the power of retailers grows more, sometimes putting FMCG companies into a dependent and vulnerable position. Among the biggest and most influential retailers in Europe we can name Tesco, Metro, Carrefour, Aldi or Auchan. Those retail giants are present all over Europe and demonstrate competitive business models, dominate the markets and have the power to influence FMCG companies' decisions. Therefore, according to McKinsey\&Company, in order for FMCG firms to success further it is possible to name several techniques, which improve performance:

- Building strategies for future growth. This technique means finding a perfect niche while introducing new products or improving operations. Mostly, when making decisions, managers look at aggregated figures of performance (per country or per product category). They are not able to see potential opportunities for growth in smaller details. Hence, the company should try to find niches in its 4P (product, price, promotions, and placement). Either it's a niche in the type of a good, pricing strategy, promo-marketing tools or execution; it will be always be an added value to try to work on each of the 4P's more in detail.
- Making the most of trade investment. It means to simply pay more attention to the ROI of a company. FMCG companies should try to make the best out of their investments, exclude the weak ones as well as to learn on past unsuccessful investments. They should grant retailers with bonuses in case of good execution and define more strict agreements to pay-for-performance.
- Tailored key-account management and in-store execution. The name speaks for itself. Companies should not simply apply standardized methodologies to all the retailers, but to be able to adjust for each customer's needs and be flexible. It is good to differentiate between the types of stores, consumer segments or areas of sales. This is possible to do through sales department (key accounts and sales representatives).
- Capturing value from internationalization. As was proved with time, in many areas internationalization helped to create value and to be competitive. In case of FMCG companies, this tool can make even greater difference because the biggest firms are multinational. It means that sharing best practices or importing company products from abroad can make the local branch stand out and be a leader on the market.

Techniques mentioned above are not a complete list of what can be possibly done in order to improve performance. But they can bring a lot of value if managers pay attention to it. Many companies around the world already apply these tools and see good results. That is why nowadays, winning of the market cannot be an easy task, which makes it even more complex to find a straightforward relationship between the commodity cost and shelf price of the products. Not only costs affect the price, but also above mentioned demanding retailers' requirements, consumers' needs and marketing techniques to attract more consumers. But this is discussed later in the thesis.

Another important point in this introduction chapter is the trends on FMCG markets. As time evolves, FMCG firms have to adjust not only to theirs and retailers' needs, but also to the needs of the end consumers. Generation today is very different from the generation 20 or 30 years ago. Therefore, the companies should be always up-to-date in order to meet consumers' needs. (fmcgconsulting.co.nz) Below the biggest modern trends are briefly described:

- Big Data. With the extensive popularity of social media, the way of analyzing data went the same direction. FMCG companies buy relevant data from the "big data" companies, who analyze and process data such as comments, searches, likes on social media. This is helpful in order to understand consumers' needs and foresee future trends.
- CSR. As for the environment or nutritional values in food, almost every FMCG company pays big attention to the CSR factor in business. Consumers nowadays are more demanding to the source of the products
they use (as from ecological perspective or usage of child labor). Another concern is what people consume. The questions if the ingredients used in production are ecologically clean, do not harm health or if not many preservatives are included always bother a modern consumer's mind. The goal of the company is to meet such requirements and to try to avoid scandals in press connected to the CSR issues as this can lead to serious consequences.
- E-commerce. With the growing popularity of Internet more and more consumers prefer shopping online. Therefore, FMCG companies have to follow this trend and offer the possibility to purchase the goods online. We can see this trend in the Czech Republic as well, when the drugstore products are distributed through websites such as Parfums.cz or food products through Rohlik.cz. Such method of distribution gives a big opportunity to grow. Moreover, e-commerce retailers usually do not have such a dominant position comparing to the classic retailers. Another important note is that e-commerce retailers do not have to own or rent a physical store. This makes negotiations and costs of distribution through such chains easier and more flexible for the FMCG companies.
- Competition with private labels. Private labels are the products branded and sold by the retailer himself. Purchasing ready goods from the suppliers, branding it with the retailer's name and later selling in its own chains, is an amazing tool to improve retailers' performance. This can create natural obstacles for the FMCG companies to compete in price with private labels because they also need to pay for the possibility to be on the shelves of the retailer. This forces the FMCG companies to increase their prices in order to cover trade investment expenses. That is why a big attention to the existence of private labels is paid. The low price of privately labeled products does not mean that the goods are of bad quality. Retailers also offer premium goods with great quality and nice packaging (for example, Tesco Finest series).

In conclusion to this chapter, we can see that even though FMCG companies exist for many years and sometimes perceived as an old-school type of a business, it is still affected by many modern trends and makes use of different techniques in order to improve performance. Another point of this chapter is to show that the FMCG industry is exposed to the consumers needs directly. This makes it not easy to dictate the company's rules on the market that is very dependent on the demand. The problem of huge competition and price wars among the companies, as well as high requirements from retailers, make the companies' strategies very flexible and sometimes difficult to execute.

## 2. Cost CLASSIFICATION AND CALCULATION Methods

In order to have a decent background for the further analysis in the practical part, it is necessary to build up a picture of the theoretical typologies of costs and what is understood by the definition of costs.

### 2.1 Basic Definitions

Cost or expense is the amount of money spent by the firm in order to gain revenues. Costs in a manufacturing company represent "consumption" of production items, necessary to create required performance of the manufacturer. Theoretically, by costs we understand usage of external production factors such as labor, land and capital. Scheme below shows the basic transformation process from inputs to outputs of a company.

Exhibit 1: Transformation process of inputs into outputs of a company


Source: Fibirová, 2015
To theoretically explain the nature of the costs, we can look at the basic concepts of costs. (Nicholson, 2010)

Opportunity costs are the costs of a good or service measured by the expense of the second best alternative of spending the resources elsewhere. Usually, when having limited resources, companies have to make a decision of where to invest the money in a best possible way. In case of an FMCG company such as, for example, L'Oreal, every year it has to be decided whether it is better to produce more of the cheap, long-known and well sold Maybelline line of
cosmetics, or to concentrate more resources on acquiring new luxury niche brands such as Kiehl's. In this case, by opportunity costs, if L'Oreal chooses to produce more profitable Maybelline cosmetics, we understand loosing the "opportunity" of gaining profit from new luxury brands. Therefore, this is represented as a certain cost of sacrificing this opportunity.

Accounting costs represent the money amount that was spent in order to produce a good or a service. It is possible to find accounting costs in corresponding statements. Hence, we can calculate accounting profit. It is, logically, revenues minus accounting costs.

Economic cost is based on the idea of including opportunity costs on top of accounting costs to show the "real" cost of production including not only money spent but also the opportunity of investing elsewhere. Here we can calculate economic profit, which is calculated by subtracting economic costs from the revenues.

We can also distinguish between the terminology of explicit and implicit costs. Explicit costs are accounting costs, which only represent money paid to the external counterparty and would be found in the statements.

Implicit costs represent opportunity costs not only for money resources, but also for machinery or land. For example, if a company owns a building for business operations, the implicit cost of it would be the opportunity to rent it to someone external.

### 2.1.1 Classification by Nature

In order to manage the costs, companies use several types of cost division.
The first type of expense division is so-called classification by nature. (Fibírová, 2015) We can attribute to it several costs listed below:

- Material and energy
- Services
- Depreciation and amortization (D\&A)
- Personal expenses, wages, employee benefits expenses
- Financial expenses

In case of an FMCG company we can say that in order to produce, for example, a Heinz ketchup, material (raw) expenses would be costs of tomato, water, seasoning and other ingredients of a ketchup as well as its packaging, e.g. plastic bottle, lid and sticker with name. Energy expense would be all the costs for electricity used in the ketchup factory's equipment and administrative building. As services expense, it is possible to attribute transportation costs of logistics, law or translation services that were paid by the company. Depreciation and amortization costs are accounting costs for usage of the equipment and technology used to produce ketchup. Wages and other expenses connected to the employees are also a mandatory part of a cost structure, as without them it would be nearly impossible for a company to operate. Financial expenses include banking loans, interest payments, hedging and other types of financial costs necessary for smooth operation.

Advantage of the classification by nature is that it is a straightforward method that allows analyzing directly and efficiently different types of expenses. A company can track how the expenses evolved over the time and make it possible to notice issues right in time, as well as to negotiate better pricing, payment and supply conditions with the counterparty. It is also good for rational management of cash flows, as this classification clearly demonstrates the direction to which the expense goes.

Classification by nature connects accounting information in income statement and expenses in the balance sheet. It also makes the cost structure more transparent and easier to control by tax authorities and auditors. This feature of classification by nature sometimes does not have to be favored by the companies, as usually firms do not wish to provide internal information openly to external counterparties.

Exhibit 2: Basic division of expenses classified by nature


Source: Vochozka, 2012

### 2.1.2 Classification by Purpose

Another type of expenses is Classification by purpose. (Vochozka, 2012) This classification if based in the characteristics of expenses. The aim of such classification is to track the purpose of the expenses for which the money was spent. For instance, it is not about whether a firm spent money on building or travelling, but rather to answer a question what the expense has happened for. Is it in order to produce more items or to have better working conditions? Such classification can also be of two types:

## - Responsive classification

It is a division of costs depending on the source of existence. In the company it can be based on the unique business units responsible for the certain purpose and that have their own budget. For example, marketing, HR or IT departments can be business units in a firm. When classification is based on business units, it is easy to track if the budget was underspent or overspent, as well as to analyze the effectiveness of each department's performance. In a bigger scope, a business unit can be a country in a cluster. For example, Czech Republic and Slovakia belong to the CEE cluster of most FMCG corporations. This layer of classification can be further segmented into more detailed divisions.

## - Calculation classification

Here we need to distinguish direct and indirect costs in order for the expenses to be calculated and correctly assigned by purpose.

### 2.1.3 Direct and Indirect Costs

Direct costs are connected with the defined type of output. It can be a product or type of service and every cost that is assigned individually to it and does not serve to any other process of the company or its other products. For example, Unilever's Dove shampoo can be identified with direct costs of production if we calculate all the expenses to produce exclusively Dove shampoo, but not Timotei. Also we can mention here marketing costs for Dove campaigns.

Indirect costs cannot be attached to one exclusive type of output. They are spent on more products and are necessary for firm's operations. It can be anything except for a case when the company is able to identify certain costs as direct. If we identify costs as indirect, it is possible to estimate proportions of their value to each type of the product, based on different assumptions or we can as well use coefficients. Therefore, each company can split indirect costs into different types of outputs.

In order to understand the connection between classification by nature and purpose (calculation and responsive) we can take a look at the scheme below.

## Exhibit 3: Relationship between classification by nature and purpose



Source: Synek, 2011

### 2.1.4 Variable and Fixed Costs

Another important division of costs, in addition to the described above classifications, is division on variable and fixed costs. (Fibírová, 2015)

Variable costs are happening proportionally to the certain volumes and are dependent on the production volumes. They can include direct material costs as well as indirect costs attached to the certain amount of production. For example, the more Heinz ketchups are being produced, the higher are expenses on tomatoes and other raw materials.

As for the fixed costs, they represent expenses that guarantee production capacity and are happening no matter if production volumes are growing or declining. Usually, they have a character of one-time paid expenses (daily, weekly, monthly, yearly). For example, in order to have smooth operations, a company that produces ice cream has to have factories and office buildings operations all year round and it does not matter if the peak of produced volumes is during the summer.

In conclusion to this part, it is necessary to understand that companies use many different types of cost classifications. Depending on the nature of the firm or their goals, it is possible to choose any of the classifications or mix them if needed. In real world, firms are way more advanced in their cost structuring and new ways of distinguishing are appearing. For example, so-called ABC cost modeling. In the next chapter we will take a closer look at it as well as basic theoretical calculation methods of costs.

### 2.2 Methods of Calculations for Cost Management

There are different ways how to calculate costs in order for them to be as trustworthy as possible and reflect the reality in the best ways. It highly depends on the type of product (if it is a simple or sophisticated product), company's requirements on effectiveness measurement of production or level of needed transparency of costs.

Calculation can be preliminary, e.g. executed before production in order to estimate future costs. It is also possible for a firm to have operational calculation, which means having costs management during the process of production. Another type is the final calculation, after the production cycle is over; a company has to reflect on the costs that were happening in previous time period. (Popesko, 2009)

### 2.2.1 Classical Methods of Calculations

Primarily, there are several methods of calculations:

1) Division method:

- Simple division
- Division by levels
- Division with proportions

2) Surcharge calculation
3) Joint production calculation

- By-product costing
- Joint product costing

4) Subtracting calculation

Each of these methods needs to be described in more detail. Below we can take a closer look them. (Synek, 2011)

## Simple division

To calculate cost per unit n , we have to divide total costs N , attributed to the certain product, by the quantity of units produced q.

$$
n=\frac{N}{q}
$$

## Division by levels

Using this method allows to calculate costs in a precise way primarily for the companies whose production is divided into several levels, for more sophisticated products with different business units in different phases. The idea is to calculate costs of the period for the sold products only. For example, if a company produced 1500 units but sold only 1000 units, other indirect costs of sales or administration would be recalculated only for these 1000 units, making their costs higher than the ones that were not sold. In reality, there can be more levels, with stock half-stuff goods that need to enter further levels of processing in order to become a finished product. It is possible to see the main idea of the method in Exhibit 4.

Exhibit 4: One level example of cost allocation


Source: Author

## Division with proportions

It is applicable when the company makes products differentiated in some physical characteristic as: size, weight, shape etc. For example, this method is used in industries that work with woods, masonry or metallurgy. Indirect costs are attributed based on proportions of time spent on producing each type of the product, salaries (bigger proportion for sophisticated products) or other indices.

Exhibit 5: Division of indirect costs with proportions based on time consumption


Source: Author

## Surcharge calculation

This calculation method is used when a company produces different types of products. Costs are divided into direct and indirect. Direct costs are calculated to the individual units and indirect costs per unit are calculated with the help of chosen basis of surcharge percent or coefficient. For example, the percentage is possible to calculate dividing indirect costs by certain chosen direct costs (for example direct labor costs). It will give a percent amount by which we can later on multiply direct cost per unit and receive indirect cost per unit. Conceptually, this method is similar to the division with proportions, as a company has to choose basis on which to allocate the indirect costs.

## Joint production calculation

This method is used when production of one type of a product is always combined and cannot be technically separated from production of a different type of product. As an example it can be chemical or agricultural industry. The main idea is that costs are relative to the joint production of different products
and therefore, none of the costs can be set as direct. Joint product costing is used when the output products are more or less the same important for the company. A firm can set different bases to segment total costs by different types of production depending on its needs. In by-product costing there is usually just one main product and other outputs are considered as minor. Therefore, in order to estimate costs of the main product, company evaluates costs of minor product and then subtracts from total costs. Hence, this method should include estimations from the firm, as the methods described before.

## Subtracting method of calculation

This aid method primarily belongs to the operational type of calculation. And the main idea of it is comparing planned, so-called standard costs, which were estimated before production, and real final costs. By subtracting planned costs from final costs, company can register deviations from the plans: overspends or underspends, which are later analyzed and the reasons of big deviations are investigated. This type of calculation is often used in FMCG companies as like any other firms, they have to forecast their profits way in advance, and after the end of the period, analysts compare forecasts versus reality and explain why the deviations had happened. For example, when foreign government sets an embargo on certain raw material, local producers have overstock of it and that can reflect in lower costs for local firms who purchase this raw material for further usage in production. This can by the end of the year lead to lower costs, comparing to the ones estimated in the beginning of the year.

Exhibit 6: Subtracting method of calculation


### 2.2.2 Modern Methods of Calculations

In this part, in addition to the previous, it would be necessary to describe the calculation methods, which are becoming more popular nowadays in different companies and institutions.

## ABC cost modeling

ABC cost model means that this method has so-called Activity Based Costing approach. The aim of this model is to attribute indirect costs by the source or activity of how they originated. In the beginning if this process, the company has to identify different business activities that help company to operate. For example, it can be ordering raw materials, procurement, transferring, quality assurance, packing of the goods and so on. Primarily, these activities concentrate on the source where the indirect costs originate. Having this sorted out, a firm can track which activities create highest expenses or lowest. This information helps it to investigate if some of those activities are necessary and efficient or not. In order to have it measurable, there are so-called cost drivers, which show, for example, in case of procurement, how many orders were made, number of clients. In case of production, it can calculate the number of working hours of equipment, number of technical controls etc. This would be the first step in this method - identify activities and make them measurable.

Second step in the ABC cost modeling is to allocate activity costs to different outputs - such as services or products. The calculations always have the relationship that processes consume resources and outputs consume processes. (Synek, 2011) Simplified relationship is presented in the Exhibit 7.

## Exhibit 7: Cost relationship in ABC model



[^0]In practice we can represent ABC Cost model as shown in the scheme below with the steps that company needs to make.

Exhibit 8: Detailed method of ABC model


## Source: Internal data of PwC Belgium

All in all, ABC cost model can have many advantages, especially for a serviceoriented company. These advantages include:

- Compliance
- Appropriate budget allocation
- No double funding
- Responsibility of cost centers
- No under/overestimation
- Transparency


## Target costing method

Another relatively new method of cost management is target costing. This assumes, that price of the final product is not derived from the expenses on it, but the market: local, regional or worldwide. The methodology is made topdown, from the market price of the similar product on the market, needed
margin and to the allowable costs that company can spend in order to achieve such a market price. If the real costs that company achieves are higher, it needs to analyze how to get to the target cost. This method was first introduced by Toyota. (Synek, 2011) It can be effective, if the company strives for longterm declining costs and when the competition on the market is high, which makes the price of the good critical. Exhibit 9 shows see simplified relationship.

## Exhibit 9: Target costing method principles



## Source: Author

Thanks to the this chapter we were able to get introduced to the different cost methodologies that companies use in order to make their business operate as efficient as possible. It gave us as well a basic outlook on cost division and partially on price estimation. But pricing strategy is another very important part of any business. That is why the next chapter will present different logical methods of how companies set prices depending on their business priorities.

## 3. PRICING STRATEGIES

In this chapter, we will pay attention to the pricing strategies in theory. How they work in companies and what different types of them can exist. As the main problematic of the thesis is connected to the costing and pricing of the FMCG goods, this chapter is necessary for understanding main priorities, strategies and logics behind a price-making process.

### 3.1 Main Objectives

Firstly, it is needed to identify the objectives of pricing. According to Stone (2007), there are four main objectives:

- Income-related
- Volume-related
- Competition-related
- Societal


## Income-related objective

As one can tell by the name, income-related objective of pricing represents one of the most important priorities for the company - earning money and gaining profits in the most efficient way. Most companies do not give up the opportunity of setting the highest possible price for their good, as every penny counts. Therefore, if after taking into account other conditions, the situation lets them to set a decent price, no company would reject this opportunity. In the real world, if a big company, especially a multinational FMCG company, raises the price to at least $5 \%$, in absolute amount it can bring really big cash profits thanks to the huge volumes sold. The main concern that is connected to the price increase is so-called price elasticity. "Price elasticity of demand is a measure of the responsiveness of quantity demanded to changes in price". (Arnold, 2014)

Price elastic demand means that if the price of a good A declines by $1 \%$, the demand for this good will increase by more than $5 \%$. And if the price of a good B increases by one $1 \%$, while demand for it will not drop by more than $1 \%$, the relationship between the price and demand is inelastic. As an example we can say that scarce products in a monopoly firm would be price inelastic. Because if the price for electricity rises, most probably people would still be dependent on it, and hence, would not spend significantly less of electricity due to the price increase. And on the other hand, if a market is competitive, and products of different firms are similar, the demand is more elastic. For example, Nike and Adidas sneakers can be named as similar substitute goods. If the price for Adidas sneaker rises by $10 \%$, then people would rather buy cheaper Nike shoes, and the sales of Adidas might fall by more than those $10 \%$. But of course, there are many other factors that influence demand power, such as brand image, consumer loyalty and so on.

## Volume-related objective

This objective is connected to the company trying to achieve as big market share on the market as possible. With lower price for its good, more potential customers may prefer the product to the other competitive. Thanks to that a firm will sell big volumes and will have big sales. The question would be if selling bigger volumes has to be necessarily more profitable. In some cases the answer would be yes. But in real world, especially for highly saturated and competitive market as FMCG, it is quite hard to reach enormous profits by selling more products with lower price than fewer products with higher price. Despite this, many sales managers strive for bigger volumes sold in order to overtake the market. Sometimes, such behavior can ruin company's profitability as well as the brands value.

## Competition-related objective

This objective is also a very important pillar for the price-setting process. If a firm operates in a competitive market, it is necessary for a company to track competitor's prices. Moreover, it is valid for the FMCG industry, where the
products of a competitor can easily substitute the biggest part of another firm's portfolio. Here we can also observe the dilemma similar to the volume-related objective. Some of the companies decrease their prices on purpose, in order to have bigger volumes. And this "forces" other firms to decrease their prices too, to keep the market share. This, very often, does not play the cards right for the profitability and brand image of the product. But in general, these are the rules of a competitive game, which means that a single company in a saturated market cannot be the king of the price and set it the way it wants disregarding its competitors.

## Societal objective

This objective is connected to the regulatory control of the market competition by the government. When the competition is big, the prices are pushed down. But when there is just one big monopolistic player or several ones, who create an oligopoly, it is necessary for the governmental institutions to pay closer attention to such companies. In times, when such companies do not feel like competing for the price or market share, they tend to overtake the market and set quite high prices for their services. Mostly these are companies in a gas, telecommunication or public transport industry. In order for the society to be able to pay for their services, the government has to regulate the price levels that such companies set.

### 3.2 Pricing Strategies

Now it is the time to take a look at the pricing strategies from the company point of view. In this part we will be able to identify the main strategies that companies choose for themselves and what motivates them to do so. It will also let us understand company's psychology, in order to be able to explain the pricing methods a chosen FMCG firm uses in the practical part of the thesis.

### 3.2.1 Skimming Strategy

This strategy is mostly used for new products that are just being introduced on the market. Usually, we can relate IT or high-tech goods to have such a pricing, or newly invented niche products. In the strategy of price skimming, producers set the initial price rather high; in order to underline its uniqueness and use the pioneer positioning. Even though the sales will not be tremendously big, such products can be quite profitable due to high margin.

### 3.2.2 Penetration Strategy

This strategy can be connected with the volume-related objective that was mentioned before. It can also be quite useful for the new entrants on the market, but rather in later product cycle stages. Companies use penetration strategy when the market is already full of similar goods and therefore, in order to "steal" the share from the competition, the prices are set low. This strategy also gives the possibility to reach high profits due to large volumes sold and rapidly win the market. (Schindler, 2011)

As we were talking about the product cycles, it would be good to see what it looks like. Exhibit 10 shows the main cycles.

## Exhibit 10: Product life cycle



Source: Businesssetfree.com

### 3.2.3 Price-Neutral Strategy

"When a new product is priced within the zone of indifference, the firm has taken a price-neutral position. From a price-neutral position, the firm has negated the potential to use price as a means to capture market share. To capture customers, executives place pressure on other marketing factors, such as promotion or distribution, when positioned as neutral." (Smith, 2012)

Price-neutral strategy can be easily named as one of the commonly used pricing strategies in the FMCG industry. As the products exist on the market for quite a long time, and the biggest players such as P\&G, Henkel or Unilever overtake a big share in the market, the pressure is put on other marketing tools than price. Influence of the promotions on consumers in the retailers' stores is gathering momentum. Exhibits 11 and 12 show how promotions in FMCG affect European markets.

Exhibit 11: Revenue share of price promotions in food retail trade with FMCG in Germany from 2001 to 2014


Source: Statista.com
As it is possible to see from the chart above, the revenue share of price promotion in food retail in Germany has drastically increased from $8,7 \%$ in 2001 to $19,5 \%$ in 2014 , by almost $11 \%$.

Exhibit 12: Year-on-Year change in volume of FMCG sales and volume of FMCG sales on promotion in Europe in 2013, by selected countries


Source: Statista.com
From the chart above, we can also conclude that year-on-year volume sales on promotions confidently win over the volumes sales without promotions in most European countries presented, especially in the Netherlands.

Knowing that the tool of promotions motivates consumers to buy more goods every year, companies do not tend to fight on regular standard prices anymore. Instead, they use the whole package of promo discounts, POS and other techniques to attract the potential buyer.

### 3.2.4 Prestige Pricing

As the name says for itself, prestige pricing represents prices set above average. Usually, luxury and high-tech firms use this tool in order to indicate the premium quality, expensive brand or a modern design of the good. In case of high-tech products, the high margins gained thanks to such pricing can be used for R\&D reinvestments to produce more advanced goods in future. In case of luxury cosmetics, perfumes or designer clothing, prestige pricing indicates expensiveness of the brand, its history and equity. For example, in an FMCG company such as L'Oreal, there are many different product lines and some of the brands (Lancome, Biotherm, Cacharel) are perceived as prestigious brands for which the corporation can charge higher prices and the consumer is ready to pay for it.

### 3.2.5 Cost-Based Pricing

If a company uses cost-based pricing, it means that the priority for it is to set the price bottom-up, starting from cost estimation and adding profit margin on top. Sometimes such method can lead to higher prices and consumers will not be ready to buy it. (Strydom, 2004) Therefore, before setting the final price, a firm should take the demand into account too.

When the company notices that the prices are too high or the margins are too low, it can start driving profitability through cost cutting. Exhibit 13 shows different methods that a manufacturer can use in order to save some money on costs.

Exhibit 13: Cost-cutting techniques of manufacturers

## Manufacturers' cost-cutting tactics

| Cheaper ingredients | Decreased warranties | Decreased shipping costs | Relocate support staff <br> (such as accounting <br> customer service) <br> offshore |
| :--- | :--- | :--- | :--- |
| Off-shore manufacturing | Automated <br> manufacturing | Poorer-quality goods | Radically changing <br> format of product such <br> as CD to downloadable <br> music sales |
| Cheaper packaging | Ingredients removed <br> or replaced | Passing along costs <br> to consumer <br> (such as shipping) | Selling direct <br> to consumers |
| Less product per <br> package | More efficlent /less <br> expensive sales force | Becoming more local | Lower staff salaries <br> and benefits |

Source: Russel, 2010
As well as the previous chapter, Chapter 3 helped to look at the theoretical problematic of cost-pricing process in a company. The different price objectives, pricing strategies and methodologies were introduced in order to help understand the practical part better. As it will be possible to see later, in reality the cost-pricing process can be much more sophisticated and sometimes it is difficult to determine the perfect way to set the price, which would perfectly correlate with the costs.

## 4. Commodity-Price Model

In this chapter we will get introduced to the Commodity-Price (further C-P) model that was built in order to calculate straightforward influence of the costs of raw materials' change on the retail price of the product. In detail, it means that technically a user of the model can enter the change of price of raw/pack material (either negative or positive) into the edition section, after which he or she will be able to see what percent the price of the product should increase or decrease under the influence of the commodity cost change. By looking at this information, ideally, we could somehow predict what kind of changes we can expect in future when coming to the store and buying our favorite shampoo or tea.

### 4.1 Introduction of the Commodity-Price Model

Let's first take a look at the basic "technical" characteristics of the C-P model:

- The model was built in Excel
- Calculation was based on simplified P\&L data of an FMCG company*
- For the sake of extension of the model and universal applicability we will take a look at different types of products
- Detailed investigation of cost influence of raw materials on various types of products was done with the help of R\&D department and applied on the products of different FMCG companies for comparison
- Only results of the model will be described in the thesis due to the specifics of the thesis, in order not to make it too technical

[^1]Another important note, is that this part will show us the real case of an FMCG company's costing and pricing practices, which we will later on connect to the theoretical part and try to assume if there is a space for improvement of their processes.

As mentioned before, in the C-P model we are going to compare different types of products and brands. Table below shows the list of products used for the model and later compared.

Table 1: Types of products and brands used in the C-P model

| srawer | $\sqrt{\text { Hewr }}$ | numis |
| :---: | :---: | :---: |
| \% | 4, | Luton |
| eceax | Macium | Witam |
| manoes | eliève | schauma |
| mans | LIVEA | Reoens |
|  | delmex | lacalut |
| menemane | Dove | GIVEA |
| Sosamesam | (10) | O |

## Source: Author

As it is seen in the table above, eight types of products were identified for further analysis (in each category two similar products).

### 4.1.1 Process Description

It is important to describe the process of building the model and how each of the steps was studied in order to get to the result. Exhibit 14 shows the general idea of this process.

Exhibit 14: Process description of C-P model


## Source: Author

The first goal of the study was to identify how the raw material ingredients and pack materials needed for production actually affect the total cost of the final product. For this purpose we have to study the cost construction of a product. Generally saying, we need to identify all types of costs needed for production and to look at the size of the chunk of raw and pack materials in it.

### 4.1.2 Cost Structure of the Company

Chosen FMCG company has a quite complicated structure, which makes it not easy to identify which exactly method of cost calculation it uses from the ones, described in the theoretical part. That is why there is a need to show the structural network of the company first.

On the Exhibit 15 it is possible to see that in the chosen FMCG company, there are several cost - accounting processes that happen in between different company entities:

- Costing process 1 - exists between factories and a logistic center
- Costing process 2 - happens after factories account their costs to the logistic center, which later charges local branch of the FMCG company for the costs of goods that it purchases
- Costing process 3 - exists between local FMCG branch and European headquarters. It is more oriented to accounting and controlling operations, rather than costs for goods purchased.

Exhibit 15: Structure of a chosen FMCG company

suppliers

## Source: Author

As one can imagine, in a multinational FMCG company there is are many ways how to control costing processes, depending on their nature and needs of each entity.

In this thesis, we are concentrating on the cost-price problematic in a local entity in the Czech Republic. For this purpose we need to take a detailed look at the scheme below, which shows the hierarchy of the costs and its construction in practice in a local FMCG company branch.

## Exhibit 16: Cost construction hierarchy



## Source: Internal source

As the scheme above shows, there are plenty of different types of expenses connected to the production of the item.

We can see that in order to identify the costs of product, company uses direct costs (raw and pack materials), as well as indirect costs (labor, transport, support functions). These costs are usually calculated in the logistic center, which is able to provide local entity with costs for each type of a good. Thanks to this, it is easy to identify cost per unit using simple division method.

Generally, all costs that can ever exist to produce and deliver the item are called total costs, from which we define two main groups of costs: product costs and supply costs.

Product costs are directly connected with the production. We can split these costs into raw material costs, which are all the ingredients used (for ice cream it can be chocolate, cream, nuts, preservatives etc.); pack material costs used for packaging (i.e. aluminum foil in ice cream) and production costs operational costs of equipment, labor, depreciation etc.

Supply costs are the ones necessary for the product to get to the place on time and in a needed quantity and quality. They include transportation, warehousing, operational costs connected to the supply chain and fees, if it is a big FMCG company. Usually these fees are paid to the mother company headquarters of supply chain (logistic center), which operates all the supply chain procedures for different countries as well as controls the process of communication between the company and suppliers of raw and pack materials and factories.

If we look at the general breakdown of costs in the pie chart below based on the analysis of internal P\&L, we will see that product costs (represented by raw materials and their procession and pack materials and their procession) take around $65 \%$ of total costs in average. Other costs include supply costs, support operations, overheads, marketing costs etc. We can also see average margin for company and average margin for customers (such as Tesco, Kaufland or Ahold). We should note that the proportions are rough averages based on internal sources and precise numbers will not be displayed due to privacy matters.

Exhibit 17: Shelf price average breakdown on costs and margins


Source: Author
As one can guess, this breakdown of costs cannot be applied directly on all of the products, as the influence and shares of different types of costs varies depending on the nature of a product. Therefore, for the sake of the C-P model and analysis of the chosen products, we needed to investigate how much do these three parts presented above - raw materials, pack materials and other costs - affect different types of products.

### 4.1.3 Practical Findings in the Cost Structure of a Company

Let's now take a look at the table below, which indicates the influence of abovementioned factors on the cost of the product, where their sum represents $100 \%$ of all costs.

Table 2: Influence of raw, pack and other costs on the total cost of the product

|  | RAW | PACK | OTHER |
| :--- | ---: | ---: | ---: |
| KETCHUP | $46 \%$ | $27 \%$ | $26 \%$ |
| TEA | $46 \%$ | $27 \%$ | $27 \%$ |
| ICE CREAM | $38 \%$ | $14 \%$ | $49 \%$ |
| SHAMPOOS | $45 \%$ | $22 \%$ | $32 \%$ |
| DEODORANTS | $21 \%$ | $54 \%$ | $24 \%$ |
| TOOTHPASTES | $29 \%$ | $29 \%$ | $42 \%$ |
| CREAMS \& LOTIONS | $27 \%$ | $46 \%$ | $27 \%$ |
| HOUSEHOLD | $25 \%$ | $44 \%$ | $30 \%$ |

Source: Author
From this table we can clearly see that different types of products are affected quite differently by raw, pack and other costs. In most of cases we can tell that food products, such as ketchup, tea and ice cream are affected more by the raw material price than the pack. In ice cream case it is obvious that other costs may lead due to the nature of the product. It is more challenging to transport ice cream and store it, as ice cream needs freezers and special temperatures in order to keep the quality good.

For the drugstore products (besides couple of exceptions) we can tell that packaging expenses affect costs the most. For these types of products it is very important in marketing purpose and user-friendly usage. Moreover, most of the raw ingredients are of chemical nature and do not as much depend on the commodity prices of raw materials.

So at this point we looked at the cost construction of the chosen categories and now we can move on to the next step, which is digging deeper inside the raw and pack materials.

In the previous part we have identified the level of importance of commodities on the products. It is time to analyze what lies inside raw materials for the products where its importance dominates over the pack and the other way around. Since our hypothesis was to look at the influence of commodities on the costs and later on the shelf price of a product, we will keep other cost factors
(such as supply chain costs or production costs) constant and will not calculate their influence in the C-P model. Chosen types of costs for analysis are marked bold in the Table 3. There it is possible to see the result of the analysis made with $R \& D$ department regarding the most "influential", e.g. costly ingredients for raw and pack materials.

Table 3: Importance level of unique raw and pack materials on different categories

| TYPE | RAW | im \% | PACK | im\% |
| :---: | :---: | :---: | :---: | :---: |
| ICE CREAM | Chocolate |  | 28\% PP (polypropylene) | 37\% |
| ICE CREAM | Skimmed Milk |  | 23\% Aluminium | 5\% |
| ICE CREAM | Cream |  | 4\% Paper | 5\% |
| KETCHUP | Tomato |  | 65\% PP (polypropylene) | 56\% |
| KETCHUP | Vegetables Mix |  | 10\% |  |
| TEA | Black Tea |  | 59\% Tea Bag Material/Paper | 43\% |
| TEA | Tea flavours |  | 18\% |  |
| DEODORANTS | FRAGRANCED ITEMS |  | 23\% Aluminium | 66\% |
| DEODORANTS | GAS HYDROCARBON |  | 39\% |  |
| DEODORANTS | ALCHLOROHYDRATE, AC |  | 12\% |  |
| SHAMPOOS | FRAGRANCED ITEMS |  | 29\% PP (polypropylene) | 81\% |
| SHAMPOOS | ALKYL ETHER SULF 1EO |  | 26\% |  |
| SHAMPOOS | Polyquaternium 10 |  | 6\% |  |
| CREAMS \& LOTION | MINERAL OIL |  | 29\% PP (polypropylene) | 40\% |
| CREAMS \& LOTION | PETROLEUM JELLY |  | 21\% |  |
| CREAMS \& LOTION | FRAGRANCED ITEMS |  | 9\% |  |
| HOUSEHOLD | ACID CITRIC |  | 17\% PP (polypropylene) | 39\% |
| HOUSEHOLD | ALKOXYLATED AMINE |  | 18\% |  |
| HOUSEHOLD | CETRIMONIUM CHLORIDE 29\% |  | 13\% |  |
| HOUSEHOLD | HYPOCHLORITE |  | 14\% |  |
| TOOTHPASTES | FLAVOURS MENTHOL |  | 37\% PP (polypropylene) | 66\% |
| TOOTHPASTES | SORBITOL |  | 29\% |  |
| TOOTHPASTES | MONOFLUOROPHOSPHATE |  | 6\% |  |

Source: Author
For the ingredient analysis it was necessary to study what each of the products contains and how much does it affect the cost within total raw costs or pack costs used in production. That is why, if by looking at the Table 2 we could see what affects the total costs more - raw or pack materials, now we can dig even deeper. We are able to tell what is the most expensive ingredient within raw or pack cost for different type of good. These commodities are marked with red color. And their price change we will further try to connect to the shelf price.

For instance, it is obvious that for ketchup tomato is the most expensive ingredient in raw material. For Pegas or Magnum, chocolate and milk are quite important, with slight domination of chocolate. Knowing that pack materials
are more important in most of the cases for the drugstore products, we can tell that polypropylene (plastic) is crucial for them.

It is necessary to notice that while studying the commodities in detail we have come to a conclusion that the volume, in which the concrete ingredient is present, does not reflect on its price influence. For example, in most of the shampoos the biggest share of the raw material in volume is water, whereas flavors make only limited amount of share. Despite that, prices of flavors in shampoos (e.g. perfumes) can be many times higher than the price of water. That is why it makes us really study the cost effect in the C-P model.

### 4.2 Application of the Model

In order to see the benefits of the C-P model we can look at the practical application of the model. This part can be divided into two steps:

- Step 1 is the identification of price change of the commodity from 2014 to 2015 , which may, by the hypothesis, affect the shelf price of the products in 2017 (taking into account a time lag that is usually 1 year). Therefore, the assumption is - if there was a change in the commodity price by the end of 2015 , this change may be implemented during 2016 production and negotiation with the customer. This may show us the result in the shelf price change the earliest in the 2017.
- Step 2 will be a practical input of the findings from the step 1 into the C-P model interface, which would give out the final results of the shelf price changes of chosen products.


### 4.2.1 Step 1: Price Changes of Chosen Commodities from 2014 to 2015

Assumption: Previous years' commodity price changes (from 2013 to 2014) were already implemented into $\mathrm{P} \& \mathrm{~L}$ and affected the costs in 2016, with oneyear time lag.

All the changes in the commodity price can be typed into the Input sheet (Table 4).

Table 4: Excel Input sheet in the C-P model


## Source: Author

If to start monitoring the price changes of commodities in 2015 from tomatoes, it is possible to notice that the commodity cost has decreased in comparison to the previous period (already implemented in the P\&L) by 8\%. European tomato market is mostly influenced by Spanish tomatoes, which have now lower price than before. (Freshplaza.com)

Exhibit 18: Tomato price in 2015


Source: Internal sources
Next commodity is chocolate, needed to produce the Ice cream glazing in Magnum and Pegas. Cocoa/chocolate has even bigger influence on ice cream costs mainly because of two reasons: firstly, it is naturally a more expensive commodity, secondly, milk prices have been decreasing for quite some time now due to growing supply of it in Europe, Russian embargo and slowed down demand from China. (Arla.com)

Exhibit 19: Cocoa price in 2015


Source: Internal sources
From the graph above we can see that cocoa prices grew by $4 \%$ in 2015 , which may reflect on the shelf price in future.

The third commodity to look at is black tea. The price in 2015 grew dramatically by $26 \%$, which was mostly caused by Kenya, one of the biggest exporters of black tea. (Bloomberg.com)

Exhibit 20: Black tea price in 2015


Source: Internal sources
Now it is time to identify commodity price changes for the drugstore products. Here there are two packaging materials: plastic (for household products and lotion pack) and aluminum (for deodorants/antiperspirants). The graphs with changes can be found below. Both of them decreased, by $3 \%$ in Plastic, and by $5 \%$ in Aluminum.

Exhibit 21: Price of Plastic 2015


Source: Internal sources

Exhibit 22: Price of Aluminum 2015


Source: Internal sources
When investigating the last two commodities used in the model - menthol flavors for tooth pastes and fragrances for shampoos, it is important to notice that these two have chemical background and are used by FMCG companies as ready commodities even though they are technically a mixture of different chemical and natural ingredients. Thanks to the internal sources it was possible to identify the price change of the two ingredients as a whole commodity (see below).

Exhibit 23: Price of Fragrance 2015


Source: Internal sources

Exhibit 24: Price of Menthol Flavors 2015


Source: Internal sources
In both cases above there is a decline in the commodity (mixture of commodities) price - 8\% in Fragrances and just 1\% in Menthol Flavors.

### 4.2.2 Step 2: Findings Input into the C-P Model Interface

Now we can enter the results of the price changes of commodities into a C-P model and that will help us to calculate the expected price change by the influence of commodity, while keeping other factors constant. In the Table 5 it is possible to see the results of input.

Table 5: Excel Input sheet in the C-P model

| RAW LIST | $\boldsymbol{T}$ CHANGE |
| :--- | ---: |
| Tomato | $-8 \%$ |
| Chocolate | $4 \%$ |
| Black Tea | $26 \%$ |
| Fragranced Items | $-8 \%$ |
| Flavours Menthol | $-1 \%$ |
| PP (polypropylene) | $-3 \%$ |
| Aluminium | $-5 \%$ |

Source: Author
As seen on the Table 5, we mostly have positive influence of commodity prices besides tea and chocolate. Therefore, Table 6 shows us the results of a possible future price change, which is in case of Tea, quite high $-10 \%$.

Table 6: Price change of products under the influence of commodity cost changes

| CATEGORY | PRICE CHANGE |
| :---: | :---: |
| KETCHUP | -2,96\% |
| TEA | 10,21\% |
| ICE CREAM | 0,32\% |
| deodorants | -2,88\% |
| SHAMPOOS | -1,97\% |
| TOOTHPASTES | -0,83\% |
| CREAMS \& LOTIONS | -1,22\% |
| HOUSEHOLD | -1,19\% |

Source: Author
The last step of the C-P model is to apply results in reality. In the Appendix section it is possible to find current prices as well as ingredients of the chosen products found on iTesco.cz We can take Tesco as an example to show how the commodities could influence real shelf prices there in future according to the hypothesis. To apply the changes it is possible to use simple mathematics because other factors are kept constant. The results are presented below.

Table 7: Result of price change in future on the chosen products from iTesco (in CZK)

| Category | Product 1 | Old <br> Price | New <br> Price | Product 2 | Old <br> Price | New <br> Price |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| KETCHUP | HEINZ | 39,90 | 38,9 | HELLMANNS | 42,90 | 41,9 |
| TEA | PICKWICK | 34,90 | 38,5 | LIPTON | 39,90 | 44,00 |
| ICE CREAM | MAGNUM | 35,90 | 36 | PEGAS | 17,90 | 18 |
| DEODORANT | REXONA | 73,90 | 71,9 | NIVEA | 87,90 | 85 |
| SHAMPOO | SCHAUMA | 64,90 | 63,9 | ELSEVE | 81,90 | 80 |
| TOOTHPASTE | LACALUT | 94,90 | 93,9 | ELMEX | 94,90 | 93,9 |
| LOTION | NIVEA | 119,90 | 118,9 | DOVE | 124,90 | 123,9 |
| HOUSEHOLD | DOMESTOS | 55,90 | 55 | SAVO | 39,90 | 39,5 |

Source: Author, iTesco.cz (May 2016)
In the conclusion of the part about C-P model description, it is necessary to say that it is possible to build an Excel tool, which can calculate a straightforward connection between the commodity price change and shelf price change in the store. But the hypothesis was rather about if it can work like this in reality or not. Therefore, looking only at the factors presented in this part will not be enough. Following chapters will help the reader to go deeper into a pricecreating process in the FMCG company and have a complete overview of the main factors which affect the price changes besides commodities, which will help us to either approve or disapprove the hypothesis and if so, to identify the main objectives why the C-P model cannot completely reflect the reality.

## 5. Limitations of the Commodity-Price Model

This chapter describes the limitations of the C-P model, which can create obstacles for the model to be implemented in reality. We will look at it from different perspectives.

Firstly, we have to statistically approve or disapprove the fact if commodities did have impact on the shelf price of the chosen products. Here we will analyze 5 years of historical data on eight pairs of products, which makes in total sixteen different analyses. For that the p-value method was chosen as one of the most reliable tools to be used. The results of the p-value test will show us if the hypothesis can be valid from the statistical point of view.

Secondly, we will take a look at the influence of promotions of the products. It is known that nowadays when seeing the prices in the store, there are a lot of products on discounts. Therefore, for companies to be competitive, it is needed to make as many promotions as possible. Recent study by Nielsen proved it to be in many cases quite unfavorable for the FMCG companies. (Warc.com) That is why it can be important to also look at the correlation between the price changes and the growing or decreasing levels of promotions. For example, if the customer (Tesco, Billa etc.) wants to have more and more promotions on the products, it will be better from a strategic standpoint of an FMCG company to increase the recommended prices in order to somehow compensate the losses from bigger discounts.

Thirdly, it is necessary to get introduced to a couple of other factors, which could affect the final prices. These belong to a so-called Strategic Pricing. It can be market conditions, tough negotiations with customers and marketing strategy of a company itself - anything that affects the price besides promotions and production costs. These factors will be described in the last part of this chapter.

### 5.1 Statistical Testing of Hypothesis

In this part we will analyze the correlation between prices of the chosen products and prices of commodities. There are several assumptions under which the calculation was done:

1. There is a 5 year time period of analysis - it is not a big period of time but due to lack of information it had to be done based on the data accessible
2. The average yearly prices (promo and non-promo) of products were based on internal data from Nielsen, the prices were taken for the whole market (not only Tesco)
3. The prices of commodities were taken as percentages, assuming that in year 2014 they were in most of categories $100 \%$ (1) and then relatively could be more or less than $100 \%$ in different years depending on the development of prices
4. Due to a very limited amount of years used it was decided to analyze all the products presented and calculate correlations for sixteen individual products to have a bigger quantity of observations

As was mentioned before the P value method of calculation of probability was chosen in order to test if the hypothesis is valid and the data analyzed could be considered as statistically significant.

Under the P value testing, we assume the null hypothesis (H0) to be true and then we either accept it or reject it based on the results of the testing.

The term significance level is used to refer to a pre-chosen probability and $P$ value is the indication of probability after the calculations of data. (Statsdirect.com)

H1 is the alternative hypothesis that exists as opposite to the H0. Therefore, the overall outcome of the analysis should be as follows: if the P value is less than the significance level, then we reject the null hypothesis, i.e. support the alternative H1 hypothesis.

### 5.1.1 P Value Test Statistical Hypothesis

Let's now identify the statistical requirements for the P value test:
H0: there is no correlation between the prices of chosen products and corresponding commodity prices

H1: there is correlation between the prices of chosen products and corresponding commodity prices

Significance level: standard - 5\% (Alpha 0,05)
Therefore, if $\mathrm{P}<0,05$ the results are statistically significant and we can reject H0 accepting H1. Simply saying, to have our results valid and prove the correlation between two variables, P value has to be lower than 0,05 .

### 5.1.2 Data Used for P Value Test

Having identified the main assumptions and requirements for calculation it is important to take a look at the data analyzed. This part introduces the reader to the data used for the testing with basic overview of it. Table 8 shows the average prices of products during five years:

Table 8: Average price development of products in 2012-2016

|  | AVERAGE PRICE IN CZK |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: |
| BRAND | $\mathbf{2 0 1 2}$ | $\mathbf{2 0 1 3}$ | $\mathbf{2 0 1 4}$ | $\mathbf{2 0 1 5}$ | $\mathbf{2 0 1 6}$ |
| MAGNUM | 33,4 | 33,8 | 34,7 | 35,3 | 35,4 |
| PEGAS | 25 | 25,3 | 25,8 | 25,9 | 25,9 |
| LIPTON | 35 | 34,8 | 34,7 | 34,1 | 33,9 |
| PICKWICK | 29,2 | 29,7 | 30,8 | 30 | 30,1 |
| HEINZ | 38,9 | 39,7 | 42,9 | 46,1 | 46,1 |
| HELLMANNS | 36,7 | 38,2 | 41,2 | 42,2 | 42,3 |
| REXONA DEO | 61,1 | 65,5 | 71,5 | 71,4 | 71,7 |


| NIVEA DEO | 74,1 | 78,9 | 76,9 | 74,1 | 76 |
| :--- | ---: | ---: | ---: | ---: | ---: |
| DOVE LOTION | 96,9 | 97,8 | 97,4 | 105,9 | 107,2 |
| NIVEA LOTION | 103,4 | 111,4 | 118,9 | 105,5 | 104,8 |
| ELSEVE <br> SHAMPOO | 72,5 | 79,3 | 77,3 | 76,4 | 76,1 |
| SCHAUMA <br> SHAMPOO | 53 | 56,4 | 56,8 | 62,1 | 61,3 |
| ELMEX | 79,7 | 78,9 | 78,8 | 81,9 | 81,4 |
| LACALUT | 82,1 | 84,3 | 87,8 | 90,1 | 90,3 |
| SAVO WC | 38,1 | 41,3 | 41,7 | 38,2 | 38 |
| DOMESTOS WC | 48,8 | 50,7 | 51,6 | 50 | 49,6 |

Source: Calculated based on Nielson internal
As we can already see from the table above, the development of prices during this period was not really consistent and for some pairs of product it was even contradicting. For example Nivea lotion's price decreased in 2015 from 118,9 to 105,5 whereas Dove lotion's price increased from 97,4 to 105,9 .

Table 9 shows the development of commodity prices over five years (with one year time lag for implementation).

Table 9: Commodity price development in 2011-2015

|  | RELATIVE DEVELOPMENT IN $\%$ |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: |
| COMMODITY | 2011 | 2012 | 2013 | 2014 | 2015 |
| CHOCO | $85 \%$ | $81 \%$ | $90 \%$ | $100 \%$ | $104 \%$ |
| TEA | $130 \%$ | $114 \%$ | $100 \%$ | $126 \%$ | $118 \%$ |
| TOMATO | $81 \%$ | $79 \%$ | $89 \%$ | $100 \%$ | $92 \%$ |
| ALUMINIUM | $101 \%$ | $98 \%$ | $97 \%$ | $100 \%$ | $95 \%$ |
| PP | $99 \%$ | $99 \%$ | $98 \%$ | $100 \%$ | $95 \%$ |
| FRAGRANCE | $95 \%$ | $95 \%$ | $97 \%$ | $100 \%$ | $93 \%$ |
| MENTHOL | $108 \%$ | $113 \%$ | $104 \%$ | $100 \%$ | $99 \%$ |
| PP | $99 \%$ | $99 \%$ | $98 \%$ | $100 \%$ | $95 \%$ |

Source: Calculation based on internal data of FMCG's Commodity trading markets
As it is possible to notice from the table above, the changes of commodity prices were also various and from the first glance not always similar to the changes occurring in the average shelf prices of products.

To have a visually comprehensive picture we can take a look at the series of charts below, which graphically show the development of prices in percentage
and brief comments about visible negative correlations that are obvious from the charts.

Chart series 1 shows percentage development of average shelf prices vs. commodity prices valid for the time period in comparison to 2015 (year 2015 is taken as basis year with $100 \%$ index for shelf price, to which 2014 year of commodity price is taken as $100 \%$ cost implemented).

Chart Series 1: Average price development for different products (2012-2016)


Chocolate price decrease in 2013 was not reflected on the prices, which were growing for both Magnum and Pegas.


Big increase of tea price in 2015 did not affect any increase in tea prices for both Lipton and Pickwick. They, otherwise, decreased compared to the previous year.


Tomato price decrease by year 2016 did not make the prices neither of Heinz nor of Hellmann's to fall.


Aluminum price has been decreasing since 2012 to 2014 whereas Rexona's price has been increasing. As it is possible to see, Nivea's price position was higher. This small observation implies the possibility of marketing strategy effect, which caused the price increase for Rexona, as these two brands are competitive.


Similar case as in deodorants can be observed in the chart above. Nivea lotion had overpriced position versus Dove lotion and declined the price by 2015, whereas Dove price was growing. PP price increase apparently had very small and limited effect on the pricing strategy of both brands


Here we can as well see negative correlation between the products price decrease from 2013 to 2014 whereas fragrance price has been growing until 2015.


Prices of tooth pastes have been growing since 2013 while menthol flavoring cost used in production has been declining until 2015.


Source: Calculation based on internal data from Nielsen
Similar case as in shampoos can be observed on the chart above. Price of PP increased between 2014 and 2015 and despite that fact, both Domestos and Savo's price have significantly decreased.

### 5.1.3 P Value Test Conclusions

After the brief overview of the available data that could be used for P value test, we can move onto the testing itself.

From just looking at the charts series described in the previous part it is already quite possible for us to have doubts if from the historical standpoint
there is a correlation between the shelf prices of the products and commodity prices. But it is obvious that the conclusion cannot be made without statistically testing the data used.

To refresh one more time the requirements we identified in the beginning of the chapter, it is necessary to name them again:

H0: there is no correlation between the prices of chosen products and corresponding commodity prices

H1: there is correlation between the prices of chosen products and corresponding commodity prices

Significance level: standard - 5\% (Alpha 0,05)
Table 10 shows brief results of the statistical P value test.

Table 10: Results of $P$ value test

|  |  |  | DENY/ACCEPT |
| :--- | :---: | :---: | :---: |
| Comparables | P value | < or $>$ than $\mathbf{0 , 0 5}$ | H0 |
| Magnum vs. Choco | 0,03 | $<$ | DENY |
| Pegas vs. Choco | 0,09 | $>$ | ACCEPT |
| Heinz vs. Tomato | 0,02 | $<$ | DENY |
| Hellmann's vs. Tomato | 0,05 | $=$ | DENY |
| Lipton vs. Tea | 0,89 | $>$ | ACCEPT |
| Pickwick vs. Tea | 0,08 | $>$ | ACCEPT |
| Rexona vs. Alu | 0,25 | $>$ | ACCEPT |
| Nivea vs. Alu | 0,35 | $>$ | ACCEPT |
| Dove vs. PP | 0,49 | $>$ | ACCEPT |
| Nivea vs. PP | 0,93 | $>$ | ACCEPT |
| Elseve vs. Fra | 0,86 | $>$ | ACCEPT |
| Schauma vs. Fra | 0,63 | $>$ | ACCEPT |
| Elmex vs. Menth | 0,11 | $>$ | ACCEPT |
| Lacalut vs. Menth | 0,06 | $>$ | ACCEPT |
| Domestos vs. PP | 0,91 | $>$ | ACCEPT |
| Savo vs. PP | 0,79 | $>$ | ACCEPT |
| Source: Author |  |  |  |

Source: Author
Unfortunately, as we can see from the table above, the doubts we had in the beginning of this part are now proved statistically. In the vast majority of the
analyses we cannot say that the data was statistically significant and we have to accept the null hypothesis, which declares that there is no correlation between the prices of chosen products and corresponding commodity prices.

Therefore, the first perspective we looked at in order to study the limitations of the C-P model, concludes that this model does not respond to reality in the historical data. Hence, the price increase cannot be predicted in such a straightforward way as it was presented in the C-P model, even though raw material costs have significant influence on the cost structure of the company.

### 5.2 Influence of Promotions

In this part, as in addition to the previous one that was disapproving the practical application of the C-P model, it is necessary to briefly look at the connection between the promotional discounts made for the customers and prices.

### 5.2.1 Promotion Data Analysis of an FMCG Company

As was mentioned before, each year customers require more and more discounts on the volume purchased from an FMCG company. They do it firstly because the prices of products have tendency to grow each year. Secondly, they want to be competitive on the retail market offering more discounts and best prices to the consumers.

These offers that the FMCG's make to the retailers, do not only include simple discounts on purchasing the products, but also budgets for promotion the product when it's on discount. All in all makes it a total Promo Depth Discount (PDD), which basically represents all the "favorable" conditions provided by an FMCG to its customer.

The market is getting tighter and tighter and the competition between the players is not only high for the retail market but for the FMCG companies themselves, they are getting tension also from private brands that are sold for
lower prices with moderate quality. Therefore, it is possible to say that in some scope, these market conditions affect many price decisions more than simple change of the commodity price.

A simple analysis was made in order to take a look at the trend for the price growth or decline each year (using the prices used in the previous chapters) and the trend of increase or decrease of the PDD.

On the series of charts below it is possible to see if the price was reacting to the trend of the discounts made for the customers.

Chart Series 2: Relative change of prices and PDD (2012-2016)


In case of ice cream one can notice growing trend in the price, about $5 \%$ for both Pegas and Magnum while the PDD offer made to the customers has grown by almost $20 \%$ from the base 2012 year. It is possible to see that with growing discounts, the prices were growing too.


If we take a look at the tea category, we can notice that PDD has grown as well by around $20 \%$ but the prices of the products did not really reflect on it. This can imply the presence of other factors influencing - costs of production (including commodities) or strategic decision. Since we know that from 2014 to 2015 the price of tea commodity has grown, as well as PDD, the only reasoning why both prices of Lipton and Pickwick did not respond to the conditions, were strategic.


In the category of ketchups, we can see almost perfect example of price reactions on the PDD.

PDD increase by 20\% was each year followed by Heinz and Hellmanns and reached $20 \%$ increase by the year of 2016. Knowing that tomato prices were
going slightly down these years, it is obvious that the customers' requirements for discounts affected the price increase happened in these years in the strategy of pricing.


In case of deodorants we can clearly see that the prices of Nivea and Rexona did not respond to the PDD increase (which had grown by $24 \%$ in 2016 comparing to 2012). We also know that aluminum price was slightly decreasing, but for Rexona we can see a growing price from 2012 to 2016 by $17 \%$ and more or less stable for Nivea. Therefore, in this situation the reasons for price changes were rather mixed and most probably included some strategic background.


Very unstable situation can be observed in Lotions. The apparent increase (by around $10 \%$ ) in PDD was only somehow reflected in the price of Dove. As we can tell, some weird pricing decision was made between 2013 and 2015, when the Nivea average price firstly increased dramatically and then decreased dramatically. Fluctuating price of PP was obviously not a reason for the pricing decisions made by respective companies.


PDD for shampoos has not been changing much surprisingly and stayed stable. For Elseve the price has increased by $5 \%$, but we also know that the fragrance commodity price was slightly growing during these years. Schauma's price has increased by $16 \%$ in 2016 . Hence, there might be two reasons for a change: either commodity price increase or the strategic pricing of Henkel.


Toothpastes' PDD has only increased by $4 \%$ by 2016. Price for Lacalut increased by $10 \%$ and Elmex'es price only by 2\%. Methol flavouring cost has been declining. Therefore, here we can say that PDD influenced the price decision in some way.


Source: Calculations based on internal data
Very controversial situation can be observed in the Household category. Drastic increase of PDD and fluctuating price of PP could not influence such a big price decrease for Savo and slight decrease for Domestos. We can also tell that the pricing has not been consistent during the 2012-2016 period. Hence we can only assume high influence of the strategic or marketing reasoning behind the price changes.

### 5.2.2 Promotions Complexity Influence

As we can see, this part of analysis has not also given us a direct answer that if the shelf price is not influenced directly by the commodity prices, then it should be influenced by the promotion discounts to the customers. We can now tell that in none of the cases it is possible for a third party - a consumer in the store - to tell with a $100 \%$ guarantee that the price change he noticed happened because of the commodity price increase or maybe because all the competing products are on sale and that the number of discounts for the category has been increasing with time.

Apparently, no such conclusion can be made easily. A reader might understand it better in the concluding part about the strategic pricing, which shows that the price decision-making is influenced by many more variables than just the costs of production or promo discounts. In the end, the price of an FMCG is a recommendation to which the retailer customer does not have to obey. And since we are studying the situation from the perspective of a consumer, the asymmetry of information, happening in the process of negotiation between the recommendation and an actual printed price in the store, can be dominating and deciding.

### 5.3 Strategic Pricing

As was mentioned in the previous parts, each FMCG company has its own methods of the pricing strategy, which is not necessarily affected by the direct components of the price such as costs or margin. Besides these components companies set a number of steps in order to get to the so-called "perfect price".

If to simplify the perfect pricing method, we can see the process below:
Exhibit 25: Perfect Pricing Approach


Source: Author

### 5.3.1 Step 1: "Set the Price"

The first step in the above-pictured process is setting the price. It is divided into two parts: Strategic Price positioning and Local price optimization.

The purpose of strategic price positioning is to define clear strategy aligned with the Brand's positioning and franchise strength. For example Magnum ice
cream is positioned as a premium brand, therefore it can be two times more expensive than a cheap ice cream but the costs to produce it do not have to be two times higher than the competitor's. It means that part of the profit belongs to the premium status of the product. Correct positioning is usually a task of marketing department, which consults the ideas with finance department.

In order to position the product correctly, marketing department uses several tools. One of them is so-called 4C framework.

Table 11: 4C Framework

| 4C's | Information needed to know and source |
| :--- | :--- |
| COMPANY | What is the current portfolio role of each brand? <br> Depends on global strategy, brand strategy plan and <br> brand range architecture |
|  |  |
|  | Is there a significant Channel or Retailer Pricing <br> Structure affecting Price dynamics? E.g. different <br> retailers and contracts with them, difference between <br> Hypermarket, Supermarket, Drugstore or other types <br> Local knowledge is the only reliable source of information |
|  | What are the relative strengths of the brands? <br> Can be used several tools such as Brand Equity Index, <br> Price elasticities, Price vs. Perceived value |
| COMPETITION | What are the market shares and relative prices vs. <br> competitive benchmarks? <br> Brand Ladder, Price Piano, S-Curve |
|  |  |

Source: Table based on internal sources
As it is possible to see from the table above, the approach of strategic price positioning using 4C framework is complex and includes many different analyses, which are connected to studying market environment.

Local price optimization is a second part of setting the price. It is very important to study market conditions in each of the countries where the product is launched or where the company is planning to change the price. For example in the countries with low purchasing power high price of a product will not make much sense as well as entering with many premium products. Hence the purpose of this part is to create localized and integrated strategy that takes into account consumer and customer needs. Marketing department studies the local market with the help of Sales. After that it proposes the pricing strategy to the Finance department, which modulates the price.

Here, it is important for Marketing to set yearly plan of local pricing for the products and adjust the strategy depending on the sizes, "popularity" of the product, geography or customer.

Besides that, companies have to analyze opportunities or needs to change the price based on different metrics. The metrics used are:

- Strategic price index
- Relative price index
- Brand equity index
- Gross margin
- Volume share
- Price elasticity
- Brand Health metrics (6P, Millward Brown)
- Pricing history
- Promotional intensity
- Basic channel mix
- Others

In the previous parts we looked at the historical evolvement of prices and at the promotional intensity. It is possible to say by this point that in order to set the "perfect" price inside the company, it is necessary to study man variables,
which can affect the price decision. And commodity cost or costs in general are not the only important variables to make the final decision.

Table 12 shows the examples of reasons that can affect the price as opportunity or need (necessity) to change it and a strategic alignment.

Table 12: Opportunities and Needs for price change

| Opportunities | Needs | Strategjc Alignment |
| :---: | :---: | :---: |
| Situation suggests we could increase price | Situation suggests we must change price | Actual vs. SPI or role in local portfolio suggests we should change price |
| Examples: <br> » Product advantage <br> » Channel, region,individual product opportunities <br> » Inefficient promotions | Examples: <br> " Commodity costs <br> » Margin requirements <br> " Competitive disadvantage | Examples: <br> » Avg. Price Index different from SPI <br> » Role of brand in portfolio is Grow Profit |

Source: internal sources
Very important is to communicate all the factors between the departments, because setting a price at the "corporate" level does little if it is not properly communicated through key channels and later on to the customer. The crucial part in the conclusion of localization of the price is preparing a so-called Customer Selling Story. That is basically the key message, which includes all the reasons (that should be valid for the counterparties) to change the price.

### 5.3.2 Step 2: "Get the Price"

After the "Set the price" step when the company has already a prepared pricing strategy it is necessary to "Get the price". It would be very nice to have the price in the store as was proposed by the company. But FMCGs can only recommend the price, not to direct it to the customer. The purpose here is the price communication to field, alignment of sell in prices. This is the task for Sales department and key-account managers to communicate with the respective customers and to be able to explain the reasons behind the certain price level of a new product or reasons of the change of the old product's price.

All in all it is about properly presenting a Customer Selling story so that the price recommended by the company could be reflected at the POS. This part depends very much on the negotiation skills of both counterparties.

At this level all the preparations done in the previous parts will not be effective if the customer denies accepting the change in the price. Therefore, we can conclude that commodity cost has even lower influence at this stage if not properly communicated along with other potential factors affecting the pricing strategy.

### 5.3.3 Step 3 "Track the Price"

After the price is set in the customer's store, it is time to start tracking the price from the financial perspective. The purpose of it is post-pricing analysis, making appropriate conclusions and changes when necessary. This is usually a task of the Finance department.

Scope of this part includes different types of analyses of which we can name several most important:

- Tracking of actuals vs. plan
- Tracking of actuals vs. strategy
- Governance framework

The points described above speak for themselves. After the prices were set and recommended to the retailer, a company has to see how big of deviations have happened during the chosen period. In case if the retailer does not display the recommended price in its stores for a long period of time, it might be a signal to the FMCG company that something should be changed either in the communication with the customer, or in its own pricing strategy. Tracking the price is a crucial step for making better decisions regarding pricing in the future.

## Conclusion

The aim of the thesis was to give a reader a comprehensive outlook on the costprice problematic of an FMCG company. In order to reach this aim both theoretical and practical approaches should have been applied.

In the first three chapters we looked at the theoretical side of the FMCG industry, costing methods and pricing strategies. First chapter presented us the motivations of the companies to constantly improve their business, look deeper into the consumers' needs and CSR motives. These trends nowadays can represent a serious lever on the decisions made by the management of FMCG companies due to growing competition between them, retailers and other players. Second chapter helped us to understand why the companies use different cost models. It also gave us an overview about the types of costs that exist in the company. This is helpful to draw conclusions about the costing structure in the practical part. Third chapter showed a variety of pricing strategies, which are applied depending on the company's needs.

At this point it is important to see what was found out in the fourth and fifth practical chapters of the thesis:

The analysis of the results of C-P model, which was developed in order to calculate direct correlation between the change in the commodity cost and the shelf price of a product, was proved by the P Value test to be rather invalid in reality. First of all, historical data and a sample of different products did not show that there was correlation between the changes of the commodity costs and average shelf prices. Secondly, the company's decisions were very much dependent on the promotions and marketing strategy. Even though in a brief analysis of the PDD we could not find direct correlation either, the conclusion is that the most possible key to the price setting in such a company is a mix of different reasons: commodity costs, promotion discounts, marketing strategies, relationships with customers etc.

Therefore, we can say that the company we studied uses a price-neutral strategy. As was mentioned before the prices between the competitive firms are more or less on the same level, even though the costs to produce could be different. This can signal that none of the companies uses the cost-based pricing, because that would reflect in significant difference in the shelf prices of similar products. Another reason is that neutral pricing methodology supposes competition rather with marketing tools, than standard shelf pricing. This thought can be supported by the increasing level of promotions on products.

Despite the fact that the company uses price-neutral strategy, it can still implement cost-cutting techniques described in the third chapter. In reality, many companies try to compensate increasing uncertainty from the commodity prices improving the production facilities, supply chain process and R\&D investments into cheaper formulas of the products.

Although we realized that the C-P model cannot guarantee a $100 \%$ correct answer on how much a certain product will cost in the future, from the side of a company it can be a useful tool. Firstly, it can help to draw a general idea of how big of a price change to implement based only on one variable such as commodity. It can work if the commodity cost deviation is very significant that there is no other way than for it be reflected in the price of a product. Secondly, based on this, C-P model tool can be used in negotiations with the retailers when it comes to price increase decisions, in order to support it. Of course, many other supportive arguments should be provided in order to win the price increase, but C-P model can be the first step in case the commodity price change is significant.

## BIBLIOGRAPHY

## Literature

ARNOLD, Roger A. Micro Economics. 11e. Mason, OH, USA: South-Western Cengage Learning, 2014. ISBN 9781133189701.

FIBÍROVÁ, Jana. Manažerské účetnictuí: nástroje a metody. 2., aktualiz. a přeprac. vyd. Praha: Wolters Kluwer, 2015. ISBN 978-80-7478-743-0.

JOHAN STRYDOM (EDITOR). Introduction to marketing. 3rd ed. Cape Town, South Africa: Juta, 2004. ISBN 0702165115.

NICHOLSON, Walter. a Christopher SNYDER. Intermediate microeconomics and its applications. 11th ed. Mason, OH: South-Western Cengage Learning, c2010. ISBN 9781439047651.

POPESKO, Boris. Moderní metody řizení nákladů: jak dosáhnout efektivního vynakládání nákladů a jejich snížení. Praha: Grada, 2009. Prosperita firmy. ISBN 978-80-247-2974-9.

RUSSELL, Edward. The fundamentals of marketing. Lausanne: AVA Academia, 2010. ISBN 978-2-940373-72-7.

SCHINDLER, Robert M. Pricing Strategies: A Marketing Approach. SAGE Publications, 2011. ISBN 1483305449.

SMITH, Tim J. Pricing strategy: setting price levels, managing price discounts, \& establishing price structures. Mason, Oh: South-Western Cengage Learning, 2012. ISBN 0538480882.

STONE, Marilyn A. a John DESMOND. Fundamentals of marketing. Routledge: 2007. ISBN 1134197438.

SYNEK, Miloslav. Manažerská ekonomika. 5., aktualiz. a dopl. vyd. Praha: Grada, 2011. Expert (Grada). ISBN 978-80-247-3494-1.

THAIN, Greg. FMCG: the power of fast-moving consumer goods, 2014. ISBN 9781622876488.

VOCHOZKA, Marek a Petr MULAč. Podniková ekonomika. Praha: Grada, 2012. Finanční řízení. ISBN 978-80-247-4372-1.

## Online sources

Arla Foods: Investor's announcement. Arla.com [online]. [cit. 2016-08-12]. Available from:http://www.arla.com/contentassets/e413bc32e41a4257a34a7c6f0f0347be/i nvestor_announcement_17-02-2016.pdf

Bloomberg. Bloomberg.com [online]. [cit. 2016-08-12]. Available from: http://www.bloomberg.com/news/articles/2015-05-10/kenya-tea-traders-see-prices-rising-from-2-year-high-after-hail

Businesssetfree. Businesssetfree.com [online]. [cit. 2016-08-12]. Available from: http://cdn3.businesssetfree.com/wp-content/uploads/2013/04/Product-Lifecyclee1364967651462.png?3d1de4

Fmcgconsulting.co.nz [online]. [cit. 2016-08-17]. Available from: http://www.fmcgconsulting.co.nz/insights/8-mega-trends-affecting-the-global-fmcg-/-cpg-industry
Freshplaza. Freshplaza.com [online]. [cit. 2016-08-12]. Available from: http://www.freshplaza.com/article/155798/Spain-Tomato-prices-down-124-procent-in-15-years

ITesco. ITesco.cz [online]. [cit. 2016-05-12]. Available from: http://itesco.cz/ Statista. Statista.com [online]. [cit. 2016-08-12]. Available from: http://www.statista.com/statistics/515529/fmcg-price-promotion-share-in-food-retail-sales-germany/

McKinsey\&Company [online]. [cit. 2016-08-17]. Available from: http://www.mckinseyonmarketingandsales.com/fit-for-europe-2020-leveling-the-playing-field-for-consumer-goods-companies

Statista.com [online]. [cit. 2016-08-17]. Available from:
http://www.statista.com/statistics/234529/comparison-of-apple-and-googlerevenues/

Statista.com [online]. [cit. 2016-08-17]. Available from:
http://www.statista.com/statistics/260963/leading-fmcg-companies-worldwide-based-on-sales/

Statista.com [online].[cit. 2016-08-17]. Available from: http://www.statista.com/statistics/375570/fmcg-sales-volume-change-vs-sales-on-promotion-european-countries/

Statsdirect. Statsdirect.com [online]. [cit. 2016-08-12]. Available from: http://www.statsdirect.com/help/basics/pval.htm

Warc. Warc.com [online]. [cit. 2016-08-12]. Available from: http://www.warc.com/Content/News/N34946_Most_FMCG_promotions_lose_mo ney.content

## Internal sources

A.C. Nielsen Company \& Co

FMCG Company*
PwC Belgium

[^2]
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## APPENDIX 1

## Prices and ingredients of chosen products

 (iTesco.com)

Heinz Rajčatový kečup 342g


Popis produktu
Rajčatový protlak ochucený, pasterovaný výrobek
e $300 \mathrm{ml}-342 \mathrm{~g}$

Složeni
Rajčata ( 148 g na 100 g kečupu), Ocet kvasný lihový, Cukr, Jedlá sủl, Extrakty kờení a bylin (obsahuje celer), Kơení
Alergeny jsou označeny tučným pismem.


## Hellmann's Kečup jemný 450g

$-20 \%$ bėżná cena 42,90 nyni 33,90
Cena je platná prii dodání do 13.04.2016.


Popis produktu
Rajčatový protlak zahuštěný

## Složení

Voda, Rajčatový koncentrát (151 g rajčat na 100 g kečupu), Cukr, Ocet, Modifikovaný kukuřičný ṡkrob, Jedlá sủl, Sušená zelenina (cibule, česnek), Směs kờeni

Bez konzervačních látek

Pickwick Ranní $25 \times 1,75 \mathrm{~g}$
$-25 \%$ běžná cena 34,90 nyní 25,90
Cena je platná prí dodání do 06.04.2016.


## Popis produktu

## Marketing značky

Pickwick Ranní je vybraná kompozice kvalitních černých čajủ. Tyto čaje se péstují na plantážich ve vyššich polohách a vynikají tak svou intenzivní vủní i chutí.
Černý čaj. Smẽs černých čajů vybrané kvality s rychlou prípravou
Dalši informace
$43,75 \mathrm{~g} \mathrm{e}(25 \times 1,75 \mathrm{~g})$.

Složeni
Cejlonský černý čaj

# Lipton Yellow label tea 25 sáčků 50 g 

$-25 \%$ bėżná cena 39,90 nyní 29,90<br>Cena je platná pri dodání do $30,04.2016$.



29,90 Kč $\quad(598,00 \mathrm{Kci} / \mathrm{kg})$
Kusy
Pridat
P
Zobrazit souvisejici akce

| Popis produktu |
| :--- |
| Vlastnosti |
| Bohatá chut, S čerstvė vymačkanou štávou z čajových lístkủ |
| Ċernýa čaj aromatizovaný. 25 nálevových sáčkủ. |
| Složeni |

Ċernýčaj', Aroma, 'Certifikováno Rainforest Alliance ${ }^{\text {n }}$

Magnum Classic 120 ml


## Popis produktu

Vlastnosti
Bez lepku
Další popis
www.facebook.com/Magnum.
Mražený krém s rostlinným tukem vanilkový v mléčné čokoládẻ (26\%)
Dalši informace
${ }^{1}$ Certifikováno Rainforest Alliance.
1porce $=120 \mathrm{ml} / 86 \mathrm{~g}$
$1084 \mathrm{~kJ} 260 \mathrm{kcal} 13 \%$
100 ml: 260 kcal 13
$904 \mathrm{~kJ} / 216 \mathrm{kca}$
100g:
$1261 \mathrm{~kJ} / 302 \mathrm{kc}$ al.

## Složeni

Obnovené odtučněné mléko, Cukr, Kakaové máslo${ }^{1}$, Zahuštėná syrovátka, Kokosový olej, Kakaová hmota¹, Glukózový sirup, Glukózo-fruktózový sirup, Sušené plnotuč né mlėko, Máselný tuk, Emulgátory (E471, sójový lecitin, E476) sirup, Glukózo-fruktozovy sirup, Susené plnotučné mlèko, Máseny tuk, Emulgatory (Eail
Stabilizátory (E410, E412, E407), Kousky vanilkových luskư, Aromata, Barvivo (E160a)


Prima Pegas Mražený krém s lískooríškovou príchutí v kakaové polevě s kousky oriišků 100 ml


Popis produktu

## Vlastnosti

Bez lepku
Mražený krém s rostlinným tukem s lískooríškovou príchutí v kakaové polevẽ s kousky oriiškủ
Dalši informace
Sušina: min. $25 \%$. Tuk: min. $10 \%$.
Hmotnost: min. 65 g .

## Složení

Voda, Kakaová poleva min. $16 \%$ (rostlinný tuk, cukr, kakao min. $14 \%$, sušená syrovátka, emulgátor. sójový lecitin, aroma), Cukr, Suşený mléćný výrobek (laktóza, rostlinné a mléčné bilkoviny, rostlinný a żivoćišný tuk, sušeny $2 \%$, Emulgátor E471, Stabilizátory E407, E410, E412, Barvivo: E150d, Orískové aroma


Rexona Motionsense Invisible aqua antiperspirant sprej 150 ml


Popis produktu

Antiperspirant sprej.

## Složeni

Butane, Isobutane, Propane, Cyclopentasiloxane, Aluminum chlorohydrate, PPG-14 butyl ether, Parfum, Disteardimonium hectorite, Propylene carbonate, Caprylic/c apric triglyceride, Gelatin crosspolymer, Cellulose gum, Sodium benzoate Aqua, Hydrated silica, Sodium starch octenylsuccinate, Maltodextrin, Hydrolysed corn starch, Silica, BHT, Benzyl alcohol, Benzyl benzoate, Benzyl cinnamate, Benzyl salicylate, Butylphenyl methylpropional, Citronellol, Geraniol, Hexyl cinnamal, Hydroxycitronellal, Limonene, Linaloo


Nivea Invisible for Black \& White Pure Sprej antiperspirant 150 ml


## Popis produktu

## Vlastnosti

48 h ochrana proti pocení, Bez alkoholu*, Dermatologicky testováno a schváleno, *neobsahuje etylalkohol
Marketing produktu
NIVEA® Sprej antiperspirant Invisible for Black \& White Pure
Nezanechává bílé stopy na čemém oblečení a píedchází vzniku žlutých skvm na bilém oblečení.
Sprej antiperspirant

## Složeni

Butane, Isobutane, Propane, Cyclomethicone, Aluminum chlorohydrate, Isopropyl palmitate, C12-15 alkyl benzoate, Parfum, Palmitamidopropyltrimonium chloride, Octyldodec anol, Propylene glycol, Disteardimonium hectorite, Propylene Parfum, Palmitamidopropyltrimonium chlo
carbonate, Dimethiconol, Benzyl alcohol


Schauma Regenerace a péče šampon 250 ml


## Popis produktu

## Marketing produktu

ŠAMPON REGENERACE A PÉĊE pro poškozené a suché vlasy. Receptura s bambuckým máslem a kokosovými výtažky uhlazuje a regeneruje strukturu vlasủ pro viditelnė pružnéjší a zdravė vypadající vlasy plné lesku. PROKAZANA UĆINNOST: Schauma s INTENZIVNE POSILUJÍCIM PROTEINEM dodává vlasúm ztracené látky a posiluje oslabené části vlasủ. PRO 100\% SÍLU a 100\% LESK.
Použití: Opláchněte. Optimálních výsledkủ dosáhnete pravidelným použiváním. Kožní snáṡenlivost dermatologicky prokázána.

## Složeni

Aqua, Sodium Laureth Sulfate, Cocamidopropyl Betaine, Sodium Chloride, Hydrolyzed Keratin, Glycine, Panthenol,
Butyrospermum Parkii Butter, Cocos Nucifera Fruit Extract, Disodium Cocoamphodiacetate, Glycol Distearate, Citric Acid, Sodium Benzoate, PEG-7 Glyceryl Cocoate, Coc amide MEA, Dimethicone, Laureth-4, Parfum, PEG-40 Hydrogenated Castor Oil, Guar Hydroxypropyltrimonium Chloride, Hydrogenated Castor Oil, Propylene Glycol, Laureth-23, Glycerin, Coumarin, $\mathrm{Cl} 16255, \mathrm{Cl} 47005$


L'Oréal Paris Elseve Total Repair 5 regenerační šampon 250 ml


## Popis produktu

Vlastnosti
5 efektủ 1 produkt, Sic amide + Pro-Keratin, Vlasy jsou více: 1 Regenerované, 2 Plné života, 3 Jemné, 4 Posilené*, 5


Marketing produktu
Expertní péče, která bojuje s 5 príznaky poškozených vlasủ - rídnutí, oslabení, drsnost na dotek, bez lesku a bez objemu.

Tajemství Total Repair 5
Proti têmto 5 priznakủm poškozených vlasủ
Laboratoree L'Oréal Paris vytvofily svou 1. זadu s obsahem pokrokového regeneračního komplexu Sic amide + Pro-Keratin
regenerovat.
5 prokázaných účinkủ - vlasy jsou více
1 Regenerované
2 PIne zivota
2 PIné život
4 Posílené*
5 Záiivé
*Instrumentální test ṡampon + balzám
Regenerační šampon.

Složení
Aqua/water, Sodium laureth sulfate, Coco-betaine, Dimethicone, Glycol distearate, Sodium chloride, Guar hydroxypropyltrimonium chloride, Quaternium-33, Sodium benzoate. Hydroxypropyltrimonium hydrolyzed wheat protein, Sodium hydroxide, PPG-5-ceteth-20, Arginine, Behentrimonium methosulfate, Salicylic acid, Polyquaternium-7, Limonene, Linalool, Benzyl salicylate, Benzyl alcohol, 2-oleamido-1,3-octadec anediol, Carbomer, Serine, Butylphenyl
methylpropional, Cetyl alcohol, Citric acid, Glutamic acid, Hexyl cinnamal, Gly ceryl linoleate, Glyceryl oleate, Glycery linolenate, Parfum/fragrance

Lacalut Sensitive zubní pasta na citlivé zuby 75 ml

## LACALUT Sensitive (Q)

| 94,90 Kč $\quad$ (1265,33 Kट̃ノ) |
| :--- |
| Kusy |
| - 1 $\mathbf{+}$ Pridat <br> $\boldsymbol{\Psi}$    |

## Popis produktu

## Marketing produktu

Chrání citlivé zubní krčky před zubním kazem.
Odvápnẻním zubního krčku se začiná tvorit zubní kaz.
Aluminiumlaktát, natriumfluorid a aminfluorid snižuii citlivost obnažených krčkủm zabrañujii vzniku kazu a pussobi na stažení dásní.

Zubni pasta na citlivé zuby

## Složeni

[^3]elmex Sensitive Whitening Zubní pasta s aminfluoridem 75 ml


## Popis produktu

## Vlastnosti

Účinná ochrana a šetrná péče o citlivé zuby, Prirozená bẻlost
Marketing produktu
Zubni pasta elmex SENSITIVE WHITENING s aminofluoridem vytváíí trvalou ochrannou vrstvu, která chrání pred bolestivy̌mi podnẽty a kazy v krc̃kové oblasti. Speciální slożení jemnẽ odstrañuje skvrny a obnovuje pirirozenou bélost Vas̃ich zubù.

Zeptejte se svého zubniho lékaře!
Speciáni zubní pasta pro každodenní ochranu cittivých zubủ
Dalši informace
Obsahuje Olaflur, ( $0,14 \% \mathrm{~F}^{-}$).

## Složeni

Aqua, Hydrated silica, Sorbitol/Glycerin, Hydroxyethylcellulose, Olaflur, Aroma, Limonene, CI 77891, Cocamidopropyl betaine, Sodium saccharin, Hydrochloric acid


Nivea Body Milk Výživné tělové mléko 250 ml


Popis produktu
Vlastnosti
Intenzivní péče, Sametovẻ hebká pokožka po 24 h , Hloubková hydratace po dlouhou dobu, Suchá až velmi suchá pokožka, Mandlový olej

Marketing produktu
Chcete poskytnout své suché pokožce intenzivní péči?
yzkouśejte Nivea® Výživné têlové mléko Body Milk
Bohaté slożení intenzivné vyživuje a znatelnẽ redukuje hrubost suché pokožky. Diky mandlovému oleji bude pokožka jemnéjší a vláćnéjsí

Výživné tẻlové mléko

## Složení

Aqua, Paraffinum liquidum, Isohexadec ane, Glycerin, Isopropyl palmitate, Cera microcristalina, PEG-40 sorbitan
 sulfate, Sodium citrate, Citric acid, Potassium sorbate, Linalool, Limonene, Benzyl alcohol, Geraniol, Citronellol, Butylphenyl methylpropional, Alpha-isomethyl ionone, Parfum, Parfum


Popis produktu

Télové mléko

## Sozen

Aqua, Ethylhexyl cocoate, Cyclopentasiloxane, Glycerin, Paraffinum liquidum, CetyI PEG/PPG-10/1 dimethicone, ocopheryl acetate, Isomerized linoleic acid, Helianthus annuus hybrid oil, Sodium PCA, Lactic acid, Potassium lactate Urea, Collagen amino acids, Cera microcristallina, Disodium phosphate, Parfum, Phenoxyethanol, Methylparaben, Butylphenyl methylpropional, Citronellol, Coumarin, Geraniol, Hexyl cinnamal, Hydroxyisohexyl 3-cyclohexene carboxaldehyde, Limonene, Linalool


Domestos Total Hygiene Ocean fres WC gel 700 ml


Popis produktu
Vlastnosti
Likviduje odolnou špínu a bakterie, Ṡtít proti vodnimu kameni
Marketing produktu
Domestos Total Hygiene dezinfekčni WC gel, revoluce v čištěni WC. Jeho inovativní víceproudá tryska umoz̃ñuje prípravku zabijet bakterie a likvidovat odolnou špínu a vodní kámen i na tẽżko dostupných místech. Vytvárí tak ochrann śtit mezi jednotlivými čištẻními.

Dalši popis
www.cleanright.eu
Dezinfekčni WC gel

## Složení

Dezinfekční látka: peroxid vodiku $2 \mathrm{~g} / 100 \mathrm{~g}$, Ménẽ než $5 \%$ neiontové povrchově aktivní látky, Bēlicíčinidla na bázi kysliku (peroxid vodiku). Parfum


## Savo WC Oceán 750ml


Popis produktu
Vlastnosti
Dezinfekce a svẽžest, Hygiena + dezinfekce
Marketing produktu

| Savo WC tekutý čisticí a dezinfekčni prípravek je výborný pomocník pro čistou, dezinfikovanou a zárivẽ bílou toaletu k |
| :--- |
| usazenin. Spolehlivé likviduje bakterie, viry a mikroskopické houby. Vưné oceánu zanechá vaši toaletu svẽzi po dlouhc |
| dobu. |
| Dalši popis |
| www.cleanright.eu |
| Tekutý čisticí a dezinfekčni prípravek |
| Složeni |

Dezinfekční látka: peroxid vodíku $2 \mathrm{~g} / 100 \mathrm{~g}$, Ménė než $5 \%$ neiontové povrchovė aktivní látky, Bēlicí činidla na bázi kysliku (peroxid vodiku), Parfum


[^0]:    Source: Author

[^1]:    * due to privacy matters, the name of the FMCG company will not be displayed

[^2]:    *name of the company is not displayed due to privacy reasons

[^3]:    Aqua, Sorbitol, Hydrated silica, Peg-32, Poloxamer 188, Coc amidopropyl betaine, Aroma, Hydroxyethylcellulose, Olaflur, Propylene glycol, Sodium fluoride, Aluminium lactate, Titanium dioxide, Allantoin, Chlorhexidine digluconate, Sodium saccharin, Bisabolol, Limonene

