THE EFFECT OF TAX AVOIDANCE AND PRODUCT MARKET COMPETITION ON COST STICKINESS WITH BUSINESS STRATEGY AS A MODERATION

MINOR THESIS

As one of the requirements for obtaining a Bachelor's degree in Accounting

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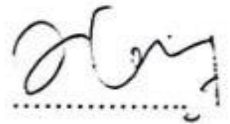
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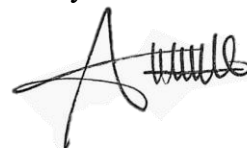# MINOR THESIS PUBLICATION APPROVAL STATEMENT PAGE FOR ACADEMIC PURPOSES

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CURRICULUM VITAE

Febby Wulandari Putri, born on October 12 2002 in Tenggarong. The author is the second of two children of Mr. Akhmad Taufik and Mrs. Nana Ekawati. The author started his elementary school education at SD Negeri 004 Tenggarong in 2008 and graduated in 2014, then continued to junior high school at SMP Negeri 2 Tenggarong and graduated in 2017, and continued to vocational high school at SMK Negeri 1 Tenggarong majoring in Accounting and graduate in 2020.

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Febby Wulandari Putri

ABSTRAK

Febby Wulandari Putri. ***Pengaruh* Penghindaran Pajak dan Persaingan Pasar Produk *Terhadap* Kekakuan Biaya *dengan* Strategi Bisnis *Sebagai Pemoderasi*.** *Dosen Pembimbing:* Ferry Diyanti. *Keputusan manajer terkait sumber daya perusahaan dapat berdampak pada pengeluaran biaya perusahaan terutama saat terjadinya penurunan aktivitas penjualan, yang berakibat kekakuan biaya. Biaya tersebut dapat ditutup dengan penghematan kas yang berasal dari penghindaran pajak atau melalui pemangkasan sumber daya yang tidak terpakai pada saat tingkat persaingan pasar produk perusahaan meningkat. Penerapan strategi juga berdampak pada pengelolaan biaya perusahaan. Penelitian ini bertujuan untuk memberikan bukti empiris bahwa penghindaran pajak dan persaingan pasar produk berpengaruh terhadap kekakuan biaya yang dimoderasi oleh strategi bisnis. Jenis penelitian ini ialah kuantitatif dengan menggunakan data sekunder. Dengan menggunakan purposive sampling diperoleh 33 perusahaan sektor manufaktur yang terdaftar di BEI periode 2013-2022. Analisis data menggunakan software SPSS 26. Diperoleh hasil penelitian yaitu (1) penghindaran pajak berpengaruh positif dan signifikan terhadap kekakuan biaya; (2) persaingan pasar produk berpengaruh negatif dan signifikan terhadap kekakuan biaya; (3) strategi bisnis prospector tidak dapat memperkuat pengaruh penghindaran pajak terhadap kekakuan biaya; (4) strategi bisnis defender tidak dapat memperkuat pengaruh persaingan pasar produk terhadap kekakuan biaya.*

Kata Kunci*: Kekakuan biaya, penghindaran pajak, persaingan pasar produk, strategi bisnis*

ABSTRACT

Febby Wulandari Putri. **The Effect of Tax Avoidance and Product Market Competition on Cost Stickiness with Business Strategy as a Moderator**. Supervisor: Ferry Diyanti. Managers' decisions regarding company resources can impact company costs significantly when sales activity decreases, resulting in cost stickiness. These costs can be covered by cash savings from tax avoidance or by pruning unused resources when the company's product market competition increases. Implementation of strategy also has an impact on company cost management. This research aims to provide empirical evidence that tax avoidance and product market competition effect cost stickiness, which is moderated by business strategy. This type of research is quantitative, using secondary data. Using purposive sampling, 33 manufacturing sector companies listed on the IDX for 2013-2022 were obtained. Data analysis used SPSS 26 software. The research results obtained were: (1) Tax avoidance has a positive and significant effect on cost stickiness; (2) Product market competition has a negative and significant effect on cost stickiness; (3) The prospector's business strategy cannot strengthen the effect of tax avoidance on cost stickiness; (4) Business strategy defenders cannot strengthen the effect of product market competition on cost stickiness.

Keywords: cost stickiness, tax avoidance, product market competition, business strategy

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDIXES

CHAPTER I

INTRODUCTION

1.1. Background

In the scope of accounting, costs are resources that must be allocated wisely by a company that is used to obtain goods or services. Managers can optimize costs and increase efficiency in resource management for the organization if managers possess a thorough understanding of cost concepts and behavior (Zulfiati et al., 2020). Mulyadi, (2018) divides costs into four groups based on behavior concerning changes in activity volume: variable, semi-variable, semi-fixed, and fixed costs. However, to make it easier for management to plan and budget operations and control costs adequately, these costs are combined into variable and fixed costs (Zulfiati et al., 2020).

However, there is a disproportionate relationship between costs and activity levels, which decreases slightly when sales fall and increases more when sales rise. In the context of this disproportionate relationship, there is an interesting phenomenon, namely asymmetric cost behavior (Anderson et al., 2003). This phenomenon can occur when managers are not agile in making cost adjustments when company activity decreases, so this behavior will result in cost stickiness. The term "cost stickiness" describes a cost behavior in which costs rise quickly when a company's activities increase than costs decrease when company activity declines. Companies with indications of sticky costs can be detrimental to shareholders because companies have an impact on reducing company profits, which will give

1

rise to agency problems, namely conflict of interests between the agent and the principal (Arliyansyah et al., 2023).

Minimizing cost stickiness can be achieved by having a thorough understanding of cost behavior, including its fundamentals and intentional managerial decisions (Banker et al., 2014). When a sales decline occurs, managers must consider the benefits of pruning unused resources. This kind of adjustment costs will be very high if sales temporarily decline (Xu et al., 2018). Therefore, managers are less likely to reduce unused resources when there is a decline in sales activity, resulting in high sticky costs.

Using legal strategies like tax avoidance, which is a tactic to reduce the amount of tax that must be paid or the tax burden by taking advantage of loopholes in tax legislation, can assist limit the reduction of unused resources (Puspita et al., 2018). Excessive tax avoidance can reflect a form of agency problem. However, if used as well as possible or not excessively, it will have an impact on saving company cash, which can be allocated to cover other costs, in the sense that tax avoidance can help minimize company expenses and increase financial flexibility.

Xu et al., (2018) conducted research related to the relationship between tax avoidance and cost stickiness which found that there was a significant negative relationship between tax avoidance and asymmetric cost behavior, which means that as a company engages in more tax avoidance, its cash flow will correspondingly increase. This will lessen managers' concerns about the expense of adjusting unused resources and enable companies to reduce them more quickly in response to declining sales. This result is also supported by research by Putra et al., (2020).

However, the results of research by Restuti, (2023) found that tax avoidance has a positive effect on cost stickiness, this indicates that managers may be encouraged to retain unused resources during a downturn by the cash savings from a company's tax avoidance operations. Managers can benefit from tax avoidance by saving money to cover on the costs of maintaining unused resources.

Besides that, another approach can be taken to minimize cost stickiness, namely by minimizing conflicts between principals and agents by improving monitoring mechanisms (Hidayat et al., 2020). One of the company's external monitoring mechanisms is product market competition. Companies fight to generate products that can compete in the market through the product market (Gherallzic et al., 2016). High product competition pushes management to enhance financial performance and make the best decisions going forward, which can resolve agency issues between shareholders and managers. Through this competition, principals can see how agents manage the company. However, inability to adjust to competition can lead to bankruptcies and employment losses (Chou et al., 2011).

Companies in a competitive situation should consider maintaining their position in market share. When there is an increase in sales, the company will gain significant profits. On the other hand, when there is a decline in sales, to survive in a competitive market, companies tend to increase costs such as research and development costs, marketing costs, or other costs to increase sales again. This statement aligns with the research results of Li et.al., (2017), who found that product market competition had a positive effect on cost stickiness. However, J. Li et al.,

(2021) found that product market competition has a negative effect on cost stickiness, because managers tend to reduce unused resources to preserve profitability when sales decline and while the company operates in a competitive market..

Research on cost stickiness is also often related to business strategy. The company's competitive advantage is reflected in the strategy implemented, which will respond to changes in the business environment and influence the company's performance. Several typologies of strategies proposed by Miles et al., (1978), of which the most common are the defender business strategy, namely a strategy to maintain market share that focuses on defense in competition with low innovation, and the prospector, namely a strategy to seek new growth opportunities and market expansion focused on innovation. Managers will adjust resource allocation to suit their competitive strategy. Ayu Widyasari, (2018) and Ballas et al., (2022), found that the defender business strategy reduces cost stickiness while the prospector strategy increases cost stickiness. It means that because prospector strategy companies prioritize long-term growth and product innovation, companies are more cautious when cutting expenses.

Higgins et al., (2015) found that companies that implemented a prospector strategy had a higher level of tax avoidance than those that implemented a defender strategy because companies with a prospector strategy have more opportunities to carry out tax avoidance. In addition, Xu et al., (2018) found a negative relationship between tax avoidance and cost stickiness that was more obvious in the business

strategy of prospectors than defenders. High tax avoidance provides prospector companies with financial flexibility to adjust unused resources.

In addition, product market competition has a negative effect on cost stickiness in a competitive and cost-focused business environment. Companies with a defender strategy will face price pressure and higher costs. Unlike a defender, the prospector strategy can reduce price competition by making products that are different from competitors. Companies with a defender strategy also have greater flexibility to adjust costs when competition increases. In contrast, when sales decline, companies with a prospector strategy have higher adjustment costs and inclined retain unused resources. This statement is different from the research conducted by J. Li et al., (2021), which found that in companies with prospector strategy, high product market competition cannot weaken cost stickiness. In other words, prospector strategy companies still experience high-cost stickiness even though product market competition is high.

Due to the background that has been explained and the need for more research examining the effect of tax avoidance and product market competition on cost stickiness, researchers are interested in studying it more deeply. Besides that, this research also adds the moderating effect of business strategy to the relationship between the independent and dependent variables. Since there has not been much study done on the moderating effect of business strategy and no relevant studies have been found in Indonesia, researchers are eager to carry out further studies in this area.

Manufacturing companies listed on the Indonesia Stock Exchange (IDX) are the objects of this study. According to Sidabutar et al., (2018), manufacturing companies listed on the Indonesia Stock Exchange exhibit sticky cost behavior since their costs rise more significantly when net sales rise as opposed to falling. Therefore, researchers are interested in further studying "The Effect of Tax Avoidance and Product Market Competition on Cost Stickiness with Business Strategy as a Moderation in Manufacturing Companies listed on the Indonesia Stock Exchange (IDX) for the 2013-2022 Period" .

1.2. The Problem Formulation

Based on the background description above, the formulation of this research problems are:

1. Does tax avoidance affect cost stickiness?

2. Does product market competition affect cost stickiness?

3. Does tax avoidance affect cost stickiness, which is moderated by business strategy?

4. Does product market competition affect cost stickiness, which is moderated by business strategy?

1.3. Research Objectives

Based on the description of the problem formulation above, the objectives of this research are:

1. To examine and analyze the effect of tax avoidance on cost stickiness.

2. To examine and analyze the effect of product market competition on cost stickiness.

3. To examine and analyze the effect of tax avoidance on cost stickiness, which is moderated by business strategy.

4. To examine and analyze the effect of product market competition on cost stickiness, which is moderated by business strategy.

1.4. The Advantages of Research

Through conducting this study, it is anticipated that the ensuing advantages can be acquired:

1. Theoretical Benefits

This study's findings would broaden academic understanding, particularly in accounting. In addition, it can offer empirical support for agency theory related to the effect of tax avoidance and product market competition on cost stickiness with business strategy as a moderator.

2. Practical Benefits

a. For investors, this research will contribute to the knowledge of managerial behavior in the context of cost management inside the organization. Therefore, investors or future investors may find this information valuable when making investing decisions.

b. For academics and future researchers, this research is expected to increase insight and knowledge in management accounting related to factors that can influence cost stickiness. Besides that, it is expected that it can become reference material for further research related to cost behavior.

CHAPTER II

LITERATURE REVIEW

2.1 Agency Theory

Agency theory was first stated by Jensen et al., (1976), who explained that there is a contractual relationship between the principal (shareholder) and the agent (management). The agent is responsible for maximizing the profits of the principal and principal will reward or compensated the agent according to the terms of the employment agreement. In this case, manager is in charge of running the company and is obligated to oversee its resources as well as the responsibilities assigned by the shareholders.

In companies with a simple capital and funding structure, company management acts as the sole owner, so there will be no agency problems within the company (Jensen et al., 1976). However, in companies that go public, there is separation of duties, which can cause agency problem. This is due to the separation in the contractual relationship. Thus, management and shareholders have different goals for optimizing the company. These differences trigger agency conflicts, including conflicts of interest and information asymmetry.

This information asymmetry arises because this theory assumes that management tends to have more information than shareholders regarding internal matters, including financial conditions, actual operations and the company's future prospects. The owner cannot consistently monitor the activities carried out by management regularly. The emergence of this conflict will give rise to other conflicts, such as conflicts of interest that arise due to a misalignment of

goals between the owner and management; in this case, management sometimes acts not in the owner's interests.

On the one hand, shareholders want maximum company value and large profit distribution according to actual conditions, while incentive contracts motivate managers to behave according to the interests of shareholders. However, managers occasionally have a tendency to put manager's interests ahead of the company's overall value by maximizing incentives. This causes a mismatch to occur between the desired and actual circumstances.

Furthermore, there is the well-known agency issue of managerial empire building. This issue relates to managers' propensity to grow the company past its ideal size, which will result in agency costs for shareholders, or to hold onto underutilized resources in an effort to boost personal utility, which begins with status, authority, pay, and prestige (Restuti, 2023; Chen et al., 2012; Jensen, et al., 1976). Thus, it can be assumed that personal utilities such as status, power, compensation, and prestige can give rise to empire-building problems in decisions regarding the adjustment of unused resources where managers tend to postpone the reduction of resources that are one of the company's long-term interests and can lead to costs stickiness.

Cost stickiness using agency theory is related to benefits in the form of incentives given to managers, which make managers prioritize profits for themselves compared to shareholders, which results in agency problems. Humans are selfish, have limited thinking power regarding the future, and always avoid risks (Eisenhardt, 1989). Based on concerns about agency problems, Anderson et al.,

(2007) argue that cost stickiness can arise because managers deliberately adjust costs when changes in sales revenue occur. Managers tend to increase costs when there is an increase in sales activity and are reluctant to reduce costs when there is a decrease in sales. The pressure of declining sales revenue or possible complaints from fired employees can be mitigated with the use of manager incentives. In this case, manager incentives are used to maintain unused resources at a certain level to maintain private cost benefits.

The phenomenon of tax avoidance can minimize the impact of high adjustment costs when managers retain unused resources. Managers can avoid the adjustment costs related keeping unused resources during periods of decreased sales activity, if tax avoidance be used fullest potential because the company was able to save money by using tax avoidance to pay for a portion of the adjustment costs.

Furthermore, product market competition can also minimize cost stickiness actions taken by managers. Product market competition is one of the company's external monitoring mechanisms that can decrease managerial slack and increase information symmetry between managers and shareholders. Financial information about competitors in the industry can give shareholders a way to monitor managers in retaining unused resources. So that managers can optimize their performance, companies can provide more significant incentives to maintain competitive advantages. This aims to motivate managers to aggressively reduce unused resources when market competition is high to maintain profitability and fulfil the wishes of shareholders.

Companies must implement suitable strategies to strengthen the reduction of agency conflicts in companies. The manager is the party who runs the company and must comply with the wishes of the shareholders. The implementation of company strategy based on the circumstancetailoreds faced by the company. Jensen, et al., (1976) stated that managers take action based on two conditions: whether the manager's interests align with those of the owner or otherwise. If interests are aligned, managers prioritize the company's interests along with the manager's achievements. Conversely, managers tend to maximize their profits and interests relative to the company if interests are not aligned. Reducing agency conflicts is critical to preserving a balance of interests between managers and shareholders, allowing the company's business strategy to contribute to optimize company performance.

2.2 Cost Stickiness

Traditional cost behavior theory divides costs into two categories: fixed costs and variable costs. Variable costs are supposed to fluctuate in proportion to changes in the company's activity level, whereas fixed costs are considered to remain constant. If there is an increase in activity by 1%, it will increase costs by 1%. Conversely, if there is a decrease in activity levels by 1%, it will also reduce costs by 1%.

Cost information is essential to businesses because it can assist managers in more precisely projecting future expenses, which can be utilized as a foundation for cost planning and decision-making. According to Sepasi et al., (2015), the traditional model only takes into account sales activity that occurred in the present

period and ignores sales activity that occurred in the past. Traditional cost theory ignores managerial intervention that may lead to the process of cost adjustment, and instead only links costs to activity levels (Anderson et al., 2003).

Cost stickiness is caused by a mismatch in cost behavior. Cost stickiness is cost behavior that occurs if the increase in costs resulting from an increased activity is more significant than when the decrease in costs occurs when sales activity decreases (Anderson et al., 2003). Malcom, (1991) initially identified this sticky cost behavior when some costs are difficult to adjust. This will lead to issues when there is an increase in activity, followed by an increase in costs, but do not reduce proportionately in response to activity decrease. Anderson et.al., (2003) and Kartikasari et al., (2018) state that two primary factors cause cost stickiness, namely managers' considerations in making decisions regarding company resources (personal considerations by self-interested managers) and inability of some costs to be adjusted when sales decrease (adjustment costs).

Managers make resource adjustments when changes in activities occur due to changes in demand (Anderson et al., 2003). Managers can recognize the emergence of sticky cost behavior. It will be simple for managers to control sticky cost behavior by taking the sensitivity to changes in specific costs into consideration once manager identify it. Managers' sensitivity in understanding costs is essential because managers must ensure cost changes, especially when a decrease is temporary or will last a long time. Cost stickiness will occur if managers choose to retain unused resources rather than adjust to declining conditions. If managers choose the first option, retaining unused resources, the company's costs will remain

large when sales decline because maintaining unused resources requires significant adjustment costs (Evelyn, 2019). These unused resources exist in the company but are not used to generate income; some examples are unused assets and unemployed employees.

2.3 Tax Avoidance

Tax avoidance is any action that impacts tax obligations, which is a particular action to reduce tax and is permitted by tax law. This action is considered not to violate the law because it takes advantage of loopholes in tax regulations. However, it can be detrimental to the state if carried out frequently with large amounts because it is known that taxes are one source of income in a country. Tax avoidance aims to maximize after-tax profits (Musaddad et al., 2022). Tax avoidance is a safe and legal action for taxpayers because it utilizes the grey area in tax laws and regulations, which aims to minimize the tax liability. From an investor's perspective, tax avoidance is an increase in value, and managers must be motivated to engage in this activity (Xu et al., 2018).

In the corporate context, companies deliberately avoid taxes to minimize the amount of taxes owed, increase the company's cash flow, and profits. Several ways can be done to minimize the tax burden, both legal and illegal. If the company follow tax regulations (lawful), then the company can take tax avoidance. Conversely, if a company does not follow tax regulations (unlawful), it is called tax evasion. In essence, it lies in the legal aspect.

In agency theory, the company taxation decisions can give rise to conflicts of interest between shareholders and managers, because there is a separation of

ownership and management. This separation illustrates that tax avoidance is crucial because it can allow managers to manipulate financial reports according to their interests. Furthermore, this also opens up opportunities for management to hide wrong information or deceive shareholders. Managers may justify these actions by claiming ignorance to avoid detection of tax avoidance activities by tax inspectors or tax authorities.

2.4 Product Market Competition

Many economists agree that competition is crucial in efficiently allocating resources (Hart, 1983). Competition occurs when two or more entities have the same customers or market share. The concept of competition is seen as a construct or idea that is measured by various factors that influence the intensity of the competition. The threat of new competitors and replacement products, buyer and supplier negotiating power, and competitiveness between current competitors are the five competitive factors that can be used to analyze competition (Porter, 1980). Thus, competition is a situation faced by two or more companies with the same market share to achieve profits, expand market share and increase sales. A company can employ the product, price, promotion, and place components of the marketing mix to alter its competitive position (Gherallzic et.al., 2016).

According to the Indonesian Dictionary, a market is a place where people buy and sell. Economics defines a market as a meeting place for sellers and buyers used to buying and selling goods and services. Kotler et al., (2005), state that a market is a collection of actual and potential product or service buyers with specific needs and desires that can be fulfilled through exchange relationships. So, the market is

where sellers and buyers meet and carry out exchanges to get what people want or need. There are several classified markets, namely perfect competition, imperfect competition, and monopoly.

A product that can satisfy someone's requirements or wants might be introduced to the market in an effort to draw interest, purchase, and consumption. A product is an instrument used to address a customer's issue (Kotler et al., 2005). According to the Indonesian Dictionary, products are goods or services created and added to their use or value in the production process and become the final result. Therefore, a product is defined as a collection of both tangible and intangible characteristics that include all of the components that define it, such as cost, color, and brand name.

Therefore, a competition between two or more enterprises that manufacture goods that are competitive in the market is known as a product market competition. One way to solve agency difficulties is through product market competition, which puts pressure on management to increase financial performance and make the best decisions in the future (Chou et al., 2011). Product market competition can minimize information asymmetry because managers' performance as company managers can be seen when the company is in high market competition.

2.5 Business Strategy

Business strategy relates to how a company plans and organizes its efforts to remain superior and competitive in a particular market, which involves the company's uniqueness and coordinating strategies in various company departments to achieve goals (Varadarajan et al., 1994). From a broad perspective, strategy is a

well-coordinated plan that is utilized for company operations and decision-making while utilizing the resources at hand to generate value and accomplish company objectives, particularly over the long term.

Business strategy refers to an company's capacity to assess its internal and external environments, develop plans of action, carry them out to meet objectives, and assess how well the plans are being carried out. Miles et al., (1978) categorized business strategies based on several typologies, namely defenders, analyzers, prospectors and reactors. Each type of strategy has unique characteristics related to the chosen market. The following are differences from several typologies previously mentioned, namely as follows:

a. Defender is a type of strategy that, if a company implements, means the company has a narrow product market coverage. Top management is very good at limiting its scope because it tends not to look for new opportunities outside its scope. Due to its narrow scope, companies rarely require major adjustments in technology, structure, or operating methods. Because it only focuses on increasing operational efficiency.

b. Analyzers are a type of strategy that is between the defender and the prospector. If the company implements this strategy, product market coverage will be relatively stable, and experiments will be carried out to create trends in the consumer environment. Companies with this strategy operate routinely and efficiently using formulated structures and processes.

c. Prospector is a type of strategy that, when implemented, the company actively observes market opportunities and experiments to create consumer trends.

Thus, this type of strategy changes frequently and is uncertain. A significant focus on product and market innovation makes companies less efficient.

d. Reactor is a type of strategy that, if implemented by a company, will prevent the company's top management from responding effectively to changes and uncertainty in the operational environment. Therefore, companies of this type are less committed to the strategy-structure relationship and rarely make adjustments that can give them the strength to follow existing environmental trends.

2.6 Previous Research

Previous research is the primary reference, which can deepen and support this research. The following is a table containing several previous research results related to the variables in this research, namely:

Tabel 2.1 Previous Research

No.	Name and Year of Research	Research Title	Research Variables	Research Results
1	Danielle Higgins, Thomas C. Omer, and John D. Phillips (2015)	The Influence of a Firm's Business Strategy on its Tax Aggressiveness	Dependent: Tax Aggressiveness Independent: Firm's Business Strategy	There is a relationship between a firm's business strategy and tax avoidance. Prospectors are more involved in tax avoidance behavior than defenders and analyzers because prospectors have more significant tax planning opportunities and respond aggressively.
2	Wu-Lung Li and Kenneth Zheng (2017)	Product market competition and cost stickiness	Dependent: Cost Stickiness Independent: Product Market Competition	There is a significant and positive relationship between product market competition and cost stickiness. Researchers found that competitive product market competition can increase the stickiness of company costs because companies tend to invest regularly, and the costs continue to increase even though sales decrease.

Continued on the next page

Tabel 2.2 Continuation

No.	Name and Year of Research	Research Title	Research Variables	Research Results
3	Shawn Xu and Kenneth Zheng (2016)	Tax avoidance and Asymmetric Cost Behavior	Dependent: Asymmetric cost behavior Independent: Tax avoidance	There is a significant and negative relationship between tax avoidance and asymmetric cost behavior. This relationship arises because of the direct economic benefits of cash savings from tax avoidance. Cash savings can reduce managers' concerns about adjustment costs because managers accelerate cost cuts in declining sales. Researchers also found that business strategy plays a role in the relationship between tax avoidance and asymmetric cost behavior.
4	Permata Ayu Widyasari (2018)	Business strategy: a study on cost stickiness behavior	Dependent: Cost Stickiness Independent: Business strategy	There is a significant effect between business strategy on cost stickiness which is characterized by the defender business strategy reducing cost stickiness in sales and administration costs. A prospector company suffers from cost stickiness due to its managers' perception of unused resources during sales cost declines and adjustment costs when sales recover. Even during a sales decline, managers can lay off employees to avoid inappropriate use of resources, which is an unprofitable choice.
5	Jia Li and Zhengying Luo (2020)	Product market competition and cost stickiness: Evidence from China	Dependent: Cost Stickiness Independent: Product Market Competition	There is a significant and negative effect between product market competition and cost stickiness. When product market competition increases, companies reduce costs actively to maintain profits. Researchers found that in developing country markets, product market competition reduces cost stickiness. Researchers also found that companies with a differentiation strategy had higher cost stickiness than those with a cost leadership strategy.

Continued on the next page

Tabel 2.3 Continuation

No.	Name and Year of Research	Research Title	Research Variables	Research Results
6	Apostolos Ballas, Vasilios-Christos N., and Orestes Vlismas (2020)	The Effect of Strategy on the Asymmetric Cost Behavior of SG&A Expenses	Dependent: Strategy Independent: Asymmetric Cost Behavior of SG&A Expenses	The company's strategic orientation determines the direction and intensity of cost asymmetry. Prospector companies show sales, general and administrative cost stickiness, while defender companies show cost anti-stickiness.
7	Rahmadani Aji Putra and Dul Muid (2020)	Pengaruh Penghindaran Pajak, Volatilitas Arus Kas Operasi dan Ukuran Pasar Terhadap Perilaku Biaya Asimetris	Dependent: Perilaku Biaya Asimetris Independent: Penghindaran pajak, volatilitas arus kas operasi, dan ukuran pasar	Tax avoidance and market size have a significant and negative effect on asymmetric cost behavior. In addition, operating cash flow volatility has a significant and positive effect on asymmetric cost behavior.
8	Nurul Fithriyyah and Hero Priono (2021)	Manajemen Laba, tata Kelola Perusahaan, Persaingan Pasar Produk Terhadap Perilaku Sticky Cost Dimoderasi Kebijakan Insentif Pajak	Dependent: Perilaku Sticky Cost Independent: Manajemen Laba, Tata Kelola Perusahaan, Persaingan Pasar Produk Moderation: Kebijakan Insentif Pajak	Earnings management has a significant and positive effect on sticky cost behavior. Corporate governance towards sticky cost behavior. However, product market competition has not been proven to have an effect and is insignificant on sticky cost behavior. In addition, tax incentive policies have been proven only to moderate the relationship between corporate governance and sticky cost behavior.
9	Mitha Dwi Restuti (2023)	Penghindaran Pajak, Karakteristik Dewan Komisaris, dan Cost Stickiness	Dependent: Cost Stickiness Independent: Penghindaran Pajak Moderation: Karakteristik Dewan Komisaris	There is a positive relationship between tax avoidance and cost stickiness. In addition, this research does not find sufficient evidence that the relationship between tax avoidance and cost stickiness is stronger in companies with a small board size than those with a large scale.

2.7 Conceptual Framework

The contractual relationship between management (agent) and the shareholders (principal) is explained by agency theory, which also addresses

conflicts of interest that emerge when management ceases to act in accordance with the shareholder's agreements and wishes. Cost stickiness is an agency conflict that arises in companies because management tends not to make cost adjustments when there is a decline in company activity.

Tax avoidance is one of the tax strategies companies carry to minimize the taxes owed and paid. Tax avoidance carried out aggressively can lead to conflicts of interest, starting with information asymmetry between management and shareholders because it relates to reporting between commercial profits and different fiscal profits. However, tax avoidance can be one way to help managers retain unused resources. When there is decrease in sales activity, managers can partially offset the expenses of maintaining unused resources with the cash savings from tax avoidance. The degree of cost stickiness that the company engages in increases with tax avoidance.

Furthermore, the company should strengthen its external supervision—part of which is through competition in the product market—in order to reduce agency conflicts (information asymmetry). Competition between companies can increase information symmetry and reduce agency costs. Shareholders have the ability to examine the financial data of industry competitors, and provides a chance to monitor managers in retaining unused resources. When a company is in a highly competitive market, managers tend to be motivated to reduce costs aggressively because intense competition can limit opportunities for increasing profits. Therefore, managers are better off reducing unused costs to maintain company profitability and fulfil shareholder desires.

In addition, a business strategy implemented appropriately and well can create harmony between management and owners. A *good business strategy* is a strategy that pursues the company's long-term growth and value. With a business strategy, it is hoped that it can strengthen or weaken the cost stickiness that occurs in manufacturing companies. In this context, tax avoidance and product market competition also have an essential role in cost stickiness, which the company's business strategy strengthens.
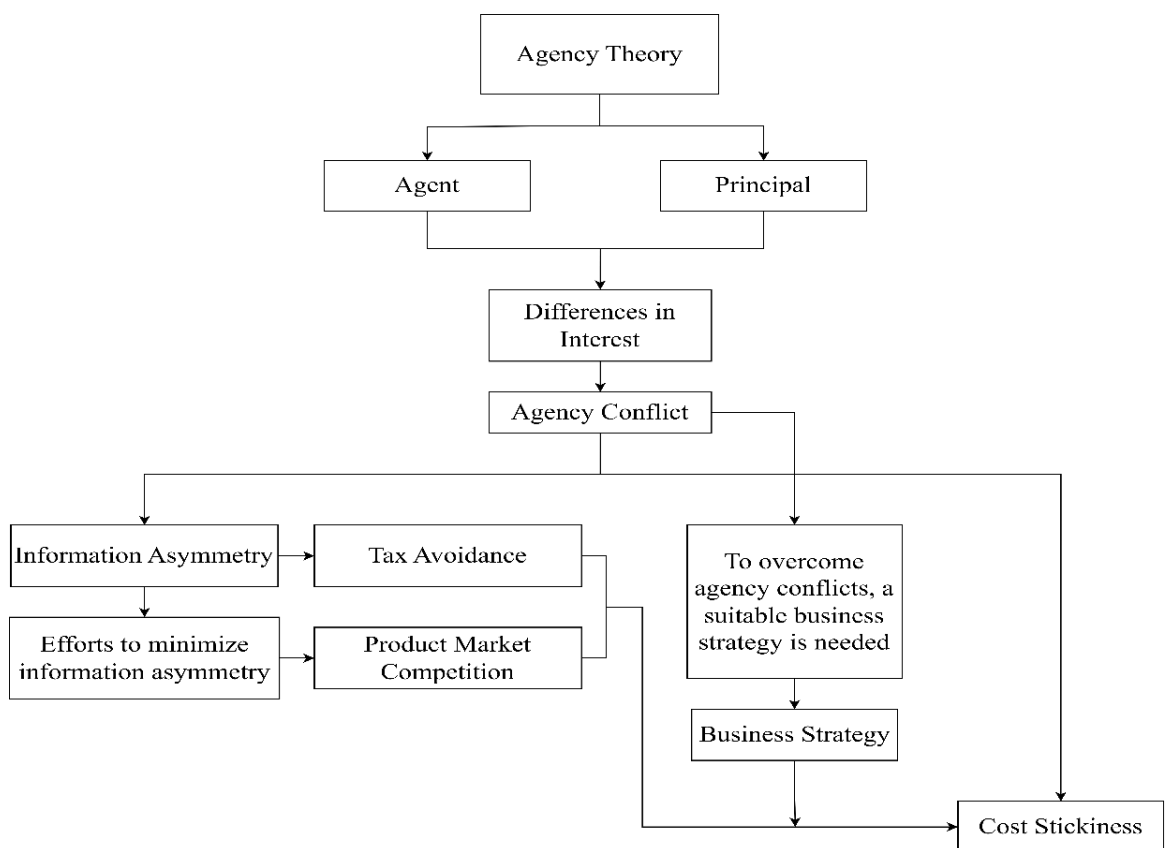
Figure 2.1 Research Conceptual Framework
Source: Developed in Minor Thesis

2.8 Hypothesis Development

2.8.1 Tax Avoidance on Cost Stickiness

Jensen, et al., (1976) stated that agency theory clarifies the contractual relationship that exists between management (agents) and shareholders (principals). The theory also addresses how ownership and corporate interests are separated, leading to agency conflicts. Agency conflicts arise when the agent only acts according to the agent's wishes without doing what the principal wants, which will cause differences in interests. Cost stickiness is closely related to agency theory, because sometimes managers make decisions to maximize utility out of self-interest.

To avoid the consequences of retrenchment, such as losing status when a division is dissolved or the anguish of terminating accustomed staff, managers may hold onto unused resources, which can contribute to sticky cost behavior (Anderson et al., (2003) and Guenther et al., (2014). When it comes to empire-building behavior, managers are eager to take on more control over resources when activity levels rise but reluctant to do so when levels fall.

When sales decline, sticky cost behavior can make it difficult for the company to sustain profits because managers are hesitant to reduce unused resources, which drives up adjustment costs. Thus, companies need to reduce expenses or costs to maximise company profits. This tax avoidance can reduce company expenses because it generates cash savings that can cover maintenance costs. When sales activity declines, managers may be motivated to retain unused resources by the cash savings from tax avoidance (Xu et al., 2018). In the context of empire-building

behavior, managers tend to use cash to retain unused resources to increase the company's size beyond optimal limits. Thus, this can increase status, power, compensation and reputation (Restuti, 2023). Therefore, excess cash can help the company cover some of the costs incurred to maintain unused resources.

The findings of a study Restuti, (2023) that found that tax avoidance has a positive and significant effect on cost stickiness lend support to this assertion. Specifically, the more tax avoidance that is done, the more cash is generated, and managers are likely to maintain adequate unused resources, which raises required costs even in the face of declining sales.

This statement is supported by the results of research conducted by Restuti, (2023), which found that there is a positive and significant effect of tax avoidance on cost stickiness, so the higher the tax avoidance carried out, the higher the cash generated and managers will continue to maintain sufficient unused resources, thus causing the required costs to be high even though there is a decline in sales. Drawing on the discussion above, it is possible to formulate the following hypothesis:

H_1 : Tax avoidance has a positive and significant effect on cost stickiness.

2.8.2 Product Market Competition on Cost Stickiness

Agency theory states that a contractual relationship occurs between the agent and the principal (Jensen, et al., 1976). The existence of this separation of interests is one of the factors in the emergence of agency problems. Conflicts that occur between agents and principals can reduce company values. The principal's goal is to increase the company's value. On the other hand, misalignment happens when the agent is unable to properly carry out the wishes of the shareholders. Anderson et al., (2007) or ABJ contend that sticky costs can occur when managers

purposefully adjust costs in response to change in sales revenue, raising concerns about agency problems. Managers are motivated to prevent sales declines or any grievances from terminated workers. According to ABJ, managers have an incentive to sustain personal benefits by holding onto unused resources at a specific level.

Jensen, et al., (1976) show that shareholders must find internal and external mechanisms. One way to conduct an external monitoring mechanism is product market competition. There will be less conflicts of interest between managers and shareholders when there is competition across companies, because it will boost information simulation and lower agency costs. Competition in the product market can promote information symmetry between managers and shareholders and eliminate management slack (Hart, 1983; and Scharfstein, 1988).

Shareholders have access to the financial data of industry competitors, giving shareholders to monitor a on management who are hoarding unused resources. Therefore, high competition can produce more information for shareholders. Strong competitiveness in tight competition can encourage higher incentives for managers. Companies will motivate managers to work harder by providing greater incentives to maintain competitive advantage, resulting in an alignment of interests and information symmetry (Arliyansyah et al., 2023).

Study conducted by J. Li et al., (2021) found that product market competition has a negative effect on cost stickiness. Managers often aggressively cut costs by eliminating unused resources when a company faces a fall in sales and operates in a competitive product market because managers know that in order to stay

competitive, managers will keep pushing for increased innovation and efficiency. In addition, managers are motivated to reduce resources aggressively because competitive rivalry can limit opportunities for increasing profits. If faced with this situation, managers think reducing unused resources is one way to maintain company profitability and fulfil shareholder desires.

On the other hand, when a company is in a product market that could be more competitive, managers tend to be willing to reduce costs aggressively, which can lead to sticky costs, which can give rise to agency conflicts. If a company experiences a decline in revenue, unused resources should also be cut as quickly as possible by managers. Suppose managers are not responsive to cuts in these resources when decline sales occurs. In that case, managers tend to prioritize their interests over shareholders who aim to maintain more extensive resources and budgets to increase the manager's welfare. Drawing on the discussion above, it is possible to formulate the following hypothesis:

H_2 : Product market competition has a negative and significant effect on cost stickiness.

2.8.3 Business Strategy Moderates the Effect of Tax Avoidance on Cost Stickiness

The agency theory states that a company is an entity consisting of shareholders (Principal) and management (Agent) who manage the company based on the authority given by the principal. Managers can organize the strategies the company will implement as best as possible, which can also influence conflicts of interest between shareholders and managers. Implementing this strategy will also

affect the resources needed and the risks the company will face. Business strategy also determines how the company allocates its resources. Allocating company resources is very important for a company to achieve its goals. If a manager optimizes personal interests, the manager will take advantage of opportunities to determine the strategies carried out when managing the company.

In managing the company, management is incentivized to optimize its interests while the owner wants to increase company value and profits. One way to increase profits is by reducing company costs. Tax avoidance can be a solution if used as well as possible to reduce the company's tax burden. Managers may be able to covering part of the costs of maintaining unused resources with the help of cash savings from tax avoidance. When sales decline, the cash can partially cover the adjustment costs.

Study by Higgins et al., (2015) found that companies using an innovation strategy (prospector) have a higher level of tax avoidance than those using a cost leadership strategy (defender), because companies using a prospector strategy have more opportunities to engage in tax avoidance. Companies applying a prospector strategy typically invest in high-risk projects in with the goal of gaining significant tax benefits should the project be successful. In addition, although cutting costs is not a top priority for prospector companies, with tax avoidance opportunities available, companies with this strategy can exploit them to increase after-tax profits.

Conversely, companies applying defender strategy have lower risk and engage in less tax avoidance. Companies with this strategy tend to produce investments with small risks, so the tax benefits companies face are also small.

Besides that, defender companies want to maintain a good reputation and comply with regulations. Even though tax avoidance is illegal, if it is not managed or used wisely, it will risk damaging the company's reputation and compliance.

In addition, it was discovered by Bhattarai, (2017) and Zhong et al., (2020) that companies applying a prospectors strategy had higher cost stickiness compared to defenders. Furthermore, Xu et al., (2018) discovered that prospectors strategy strengthen the relationship between tax avoidance and cost stickiness. It indicates that companies with a prospector strategy tend to be more careful in reducing their costs and resources because companies focus more on product innovation and long-term growth.

Managers can use cash savings from tax avoidance to cover some of the costs arising from maintaining unused resources. So, by implementing the prospector strategy, the company can maximize tax avoidance opportunities, which will help maintain unused resources within the company. This strategy can also use these resources to innovate further and make massive investments in resources. Despite declining sales activity, prospector strategies tend to find it challenging to cut off unused resources. Thus, the prospectors strategy can strengthen the influence of tax avoidance on cost stickiness. Drawing on the discussion above, it is possible to formulate the following hypothesis:

H_3 : The prospector's business strategy strengthens the effect of tax avoidance on cost stickiness.

2.8.4 Business Strategy Moderates the Effect of Product Market Competition on Cost Stickiness

Agency theory explains the relationship between the shareholder (Principal) and management (Agent) in an employment contract for a company, where the manager is given authority by the shareholder to manage the company. Contractual relationships may give rise to conflicts since shareholders and managers have different interests. The company's strategy may have an impact on the conflict of interest that exists between managers and shareholders. But it can also assist companies in maximizing performance. Managers are motivated to engage in activities that are beneficial to manager.

Competition in the product market is one of the external monitoring that may be used to monitor management activities and reduce agency conflicts. In addition, competition in the product market may motivate managers to increase the effectiveness of cost control within the organization. When competition is tight, management tends to be more responsive to changes in sales by reducing their costs.

A company indeed implements a business strategy for long-term goals. Different business strategies influence management's response to market changes and cost stickiness. Companies that adopt an innovative prospector strategy may reduce demand elasticity, develop loyalty, and establish a distinctive position for prospective clients. In addition, companies with a prospector strategy can change market conditions initially focused on the product's price to the opposite. J. Li et al., (2021) found that the effect of product market competition on cost stickiness does not have a significant difference between companies that adopt prospector or

defender strategies in a developing market environment. Even if a company adopts a prospector strategy, it will actively reduce costs and hold onto profits to compete when product market competition increases up.

However, J. Li et al., (2021) argue that product market competition does not negatively affect cost stickiness with a prospector strategy because a differentiation strategy can reduce its vulnerability to price pressure in product market competition. It happens because this strategy can create products that competitors cannot imitate, so companies can set higher prices and increase customer loyalty. However, in the face of declining sales, companies with this strategy find it more challenging to reduce costs because the costs faced by companies tend to be high, which, if reduced, can have an impact on innovation or product quality in competition. Hence, companies tend to prefer to retain unused resources that can be used for innovation.

Meanwhile, companies with a defender strategy tend to focus on standardized or efficient production, so the company always tries to keep costs low and creates a flexible cost structure. When product market competition is high, companies will face price pressure and higher costs. However, companies can adapt to changes in the competitive market environment, especially if there is a decline in sales or profits. To minimize losses, companies with a defender strategy have the flexibility to adjust costs by cutting unused resources so that the costs caused by these resources also decrease. Thus, the company's cost stickiness may be decreased by the defender strategy company's capacity to adjust to intense competition in the

product market. Drawing on the discussion above, it is possible to formulate the following hypothesis:

H4 : Business strategy defender strengthens the effect of product market competition on cost stickiness

2.9 Research Model

In this study, there is one dependent variable (Cost stickiness; Y), one moderating variable (Business strategy; Z), two independent variables (Tax avoidance; X_1) and (Product market competition; X_2). The research model was created in the manner described below, taking into account the hypothesis that was previously explained:
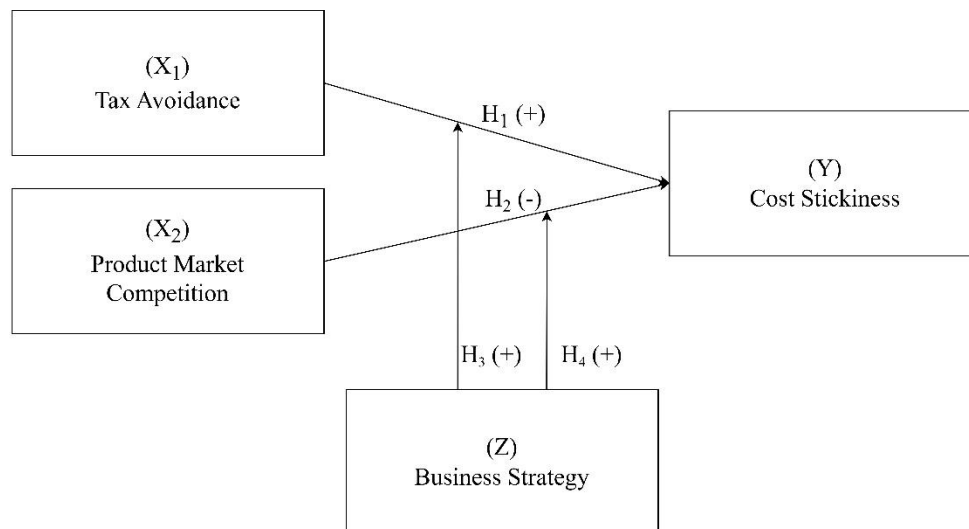
Figure 2.2 Research Model
Source: Developed in Minor Thesis

CHAPTER III

RESEARCH METHODS

3.1   Operational Definition and Variable Measurement

3.1.1 Cost Stickiness (Y)

Cost stickiness is cost behavior that has a sticky nature, where costs will be high if there is an increase in activity, but if there is a decrease in activity, the costs will not be easy to reduce. One of the reasons for cost stickiness is managers' considerations in making decisions related to company resources. Managers are responsible for company resources, especially unused resources, which will incur adjustment costs. The cost of adjusting these resources arises from managers' decisions about whether to retain or remove these unused resources as sales activity declines. Cost stickiness in this research is related to managers' decisions in managing unused resources in the company, where in this management, managers can maintain or cut these resources. If managers cut these resources, then managers will lose these resources, which could affect company performance. However, if managers keep these resources, costs will arise, and the company must pay. These costs can have a significant impact if the company experiences a decline in sales.

Cost stickiness in this research is related to the cost of goods sold and selling, general and administrative costs, which consist of fixed and variable costs. The cost stickiness seen in this research is overall, where costs and income in this period are compared with the previous period, resulting in a difference. From this difference, it can be concluded that it is related to the cost stickiness phenomenon. This research uses selling, general, and administrative costs and cost of goods sold as a

proxy for cost stickiness using the ABJ model framework developed by Anderson et al., (2003), Subramaniam et al., (2003), Banker et al., (2014), and Fakhroni, (2017). This model compares selling, general, and administrative costs, cost of goods sold, and sales in the current and previous periods. This study's research period is 2013 - 2022, so some data related to 2012 will also be used. The resulting difference can indicate whether costs are sticky or not. The following is a regression estimate from the model.

$$\Delta lnDV_{i,t} = \beta_0 + \beta_1 \Delta \ln\ SALES_{i,t} + \beta_2 DEC_{i,t} \times \Delta \ln\ SALES_{i,t} + \varepsilon_{i,t}$$

Explanation:

$\Delta lnDV_{i,t}$: The natural logarithm of cost of goods sold and selling, general and administrative costs in year t (research period) is compared with the natural logarithm of total selling, general, and administrative costs and cost of goods sold in year t−1 (previous period).

$\Delta \ln\ SALES_{i,t}$: The natural logarithm of net income or sales in year t (research period) is compared with the natural logarithm of net income or sales in year t-1 (previous period).

$DEC_{i,t}$: Dummy variable that describes sales. If sales have decreased compared to the previous year given a value of 1, and if sales have increased compared to the previous year are given a value of 0.

$\varepsilon_{i,t}$: Error term.

The regression equation was carried out using the IBM SPSS Statistics 26 analysis tool. Based on the definition of cost stickiness, the assumption that cost

stickiness is indicated is if $\beta_1 > 0$, $\beta_2 < 0$, and $\beta_1 + \beta_2 < \beta 1$ or a significant negative β_2 indicates the existence of cost stickiness.

3.1.2 Tax Avoidance (X_1)

One of the strategies companies use to reduce their tax liability is tax avoidance, which will help companies save cash and incur less expenses. This practice is legal because companies exploit loopholes in tax regulations. The cash saved on taxes might be utilized as an internal funding source for the company. In order to measure tax avoidance, this study employs the Cash Effective Tax Rate (CETR) as a proxy. This model was proposed by Dyreng et al., (2008); Higgins et al., (2015); and Xu et al., (2018) by contrasting cash taxes paid with pretax income (income before taxes).

$$\text{CETR} = \frac{\text{Cash Taxes Paid}_{i,t}}{\text{Pretax Income}_{i,t}} \times (-1)$$

The company will avoid paying more taxes if the CETR value is lower. On the other hand, there will be lower tax avoidance if the resulting CETR score is larger. The measurement is multiplied by -1 to increase tax avoidance because a greater CETR value indicates lesser tax avoidance (Cook et al., 2017). To put it briefly, less tax avoidance is done the lower the CETR score that is produced.

3.1.3 Product Market Competition (X_2)

Product market competition is competition between companies to produce products that can compete. Companies must reduce expenses related to or unrelated to operations to compete in the market and achieve the desired targets. This research uses the Price-Cost Margin (PCM) adopted from research by Chou et al., (2011),

H. Chen et al., (2020), and Yanuardi & Usman, (2022) as a proxy for measuring product market competition.

$$PCM_i = \frac{Profit_{it}}{Sales_{it}}$$

Where $profit_{it}$ is sales minus cost of goods sold and selling, general, and administrative costs. A higher PCM value indicates higher product pricing power and higher competitiveness of a company's profits (H. Chen et al., 2020). After that, to see competition between industries, it is determined using IPCM by subtracting the company's PCM from the industry average PCM.

3.1.4 Business Strategy (Z)

A business strategy is an action, decision, or initiative that has been well planned by a company that aims to achieve long-term goals or objectives. This research uses two general types of typologies from Miles et al., (1978), namely defender and prospector. Defender is a strategy that focuses on operational efficiency and avoids large risks, while prospector is a strategy that prioritizes innovation and exploring larger and wider markets. Before analyzing companies' strategies, the first step is to calculate the ratios that must be used. Some of the business strategy proxies used are in the form of ratios that have been developed and used by previous research, such as Higgins et al., (2012), Bentley et al., (2013), and Hendrani et al., (2022); these proxies are used to measure the differences in strategies implemented in each company, namely as follows:

1. The number of employees and sales in a given year can be utilized to measure how effectively goods and services can be produced and distributed.

$$EMP/SALES = \frac{\text{Number of Employees}}{\text{Sales}}$$

2. By contrasting the share price and book value per share, the company's growth rate (also known as the market-to-book ratio) can be determined.

$$Mtob = \frac{\text{Stock Market Price at the End of Period t}}{\text{Total Company Equity/Number of Shares Outstanding}}$$

3. One way to measure marketing and sales is to compare annual advertising costs with total sales.

$$Market = \frac{\text{Advertising Expenses}}{\text{Total Sales}}$$

4. Fixed Asset Intensity is measured by comparing property, plant, and equipment with total assets.

$$PPEINT = \frac{\text{Property, Plant, and Equipment}}{\text{Total Assets}}$$

These ratios are calculated annually for each company according to its industry. Then, the ratio results are sorted based on the quintile value. Five is assigned to the quintile at the top, four to the quintile below it, and so forth. Thus, the lowest quintile value is given a value of 1. Meanwhile, the PPEINT ratio for ordering the quintiles uses the inverse of the three previous ratios, namely, the highest quintile is given a value of 1, the highest quintile after that is given a value of 2, and so forth. So, the lowest quintile score is given a value of 5. The following is the composition of the business strategy score.

Tabel 3.1 Score Composition and Strategy Calculation

EMPS	MtoB	Market	PPEINT
5	5	5	1
HIGHEST			
4	4	4	2
3	3	3	3
2	2	2	4
1	1	1	5
LOWEST			

Each company can receive a maximum score of 20 and a minimum score of 4, based on the annual total score for each organization. The classification of each company's business strategy can therefore be shown in this score. This study's classification of business strategies follows the most popular typology proposed by Miles et al., (1978), which includes prospector and defender. The table that follows can be used to ascertain each company's strategy:

Tabel 3.2 Strategy Determination

Strategy	Code (Dummy)	Strategy Classification
Score $4-12$	0	Defender
Score $13-20$	1	Prospector

In this research, there are two code classifications for testing moderated regression analysis, where the code in the table above is used to test one of the research hypotheses, namely the third hypothesis. To analyze the fourth hypothesis, the strategy used is to reverse the code 0 as a prospector and 1 as a defender.

3.2 Research Population and Sample

3.2.1 Research Population

In a study, the population is the object of study as a whole. Manufacturing companies listed on the Indonesian Stock Exchange comprise the population group considered in this study. Using the www.idx.co.id website, the author can access financial reports and annual reports of manufacturing businesses listed on the Indonesia Stock Exchange for 2013 through 2022, which were the data sources used

in this study. It is known from these data that 225 companies made up the study's population.

3.2.2 Research Sample

The sample is a portion of the characteristics that compose up the population, chosen according to established criteria to ensure that it accurately reflects the population. Purposive sampling is a random sampling technique where the sample group is determined based on specific considerations or criteria, which is the sample selection approach employed in this study. This study uses several sample selection criteria, including the following:

1. Manufacturing companies that consistently publish financial reports and annual reports for 2013-2022.

2. Manufacturing companies that publish financial reports and annual reports using the rupiah currency for 2013-2022.

3. Manufacturing companies whose net profit before tax is positive or do not experience losses during 2013-2022.

4. Manufacturing companies that have complete data for measuring all variables.

Table 3.3 Research Sample Screening Criteria

No.	Explanation	Jumlah
1.	Manufacturing company listed on the Indonesia Stock Exchange for 2013-2022.	225
2.	Manufacturing companies that do not consistently publish financial and annual reports in 2013-2022.	(107)
3.	Manufacturing companies that publish financial reports and annual reports do not use the rupiah currency in 2013-2022.	(27)
4.	Manufacturing companies whose net profit before tax is negative or experience losses during 2013-2022.	(24)
5.	Manufacturing companies that do not have complete data for measuring all variables.	(34)
Number of Samples		33
Year of Observation (2013-2022)		10
Number of Samples During the Research Period		330

Source: www.idx.co.id (Processed by the Author, 2023)

Purposive sampling was used to choose the 330 samples that comprised this study's total sample. It is known that, during 2013–2022, there were 225 manufacturing enterprises listed on the Indonesia Stock Exchange, based on a population that has already been determined. 33 manufacturing companies listed on the Indonesia Stock Exchange from 2013 to 2022 that satisfied the requirements to be the sample for this research were acquired after the sample was filtered using criteria.

3.3 Data Types and Sources

This study makes use of quantitative data from companies annual reports and financial reports. Secondary data, which is all information linked to entities listed on the Indonesia Stock Exchange between the years 2013–2022 and is represented by numbers, is the data source used in this study. The Indonesian Stock Exchange's official website, www.idx.co.id, as well as the official websites of associated companies provided the data during this period.

3.4 Method of Collecting Data

The documentation approach, which includes obtaining annual reports and financial reports from manufacturing companies, was utilized to collect data for this study. In addition, additional supporting information was gathered using the literature study approach, which consults earlier studies relevant to the current investigation.

3.5 Data Analysis Technique

Multiple linear regression was used in this study to assess the effect of each independent variable on the dependent variable. Therefore, all classical

assumptions must be satisfied to obtain an unbiased estimator and the best estimate. The statistical program IBM SPSS Statistics version 26.0 was the tools utilized in this study.

3.5.1 Descriptive Statistical Analysis

In order to examine data, descriptive statistics are used to describe or illustrate the data that has been collected with no intention of drawing conclusions or making broad generalizations. In other words, the data will give descriptions or information based on the average (mean), variance, standard deviation, sum, range, maximum, and minimum values.

3.5.2 Classical Assumption Test

The classical assumption test is used for linear regression to screen for bias in data analysis and prevent misspecification of the regression model. The normality, multicollinearity, heteroscedasticity, and autocorrelation tests must be performed on the classical assumptions before the study hypothesis can be tested.

3.5.2.1 Normality Test

In a linear regression model, the normality test seeks to determine if the independent and dependent variables have a data normal distribution. The data must be distributed normally or closely to normal to create a good regression model. The Kolmogorov-Smirnov non-parametric statistical test is one tool for determining if the data of variables are normal (Ghozali, 2021). The Kolmogorov-Smirnov test compares a series of data in a sample against a normal distribution of a series of values with the same mean and standard deviation. In this test, the data is considered normally distributed if the significance value is greater than 0.05 from 0.05. If the significance value is less than 0.05, the data is not normally distributed.

3.5.2.2 Multicollinearity Test

The multicollinearity test aims to test whether a regression model has a correlation between independent variables in a study (Ghozali, 2021). Multicollinearity is a situation where independent variables correlate with each other. So, what is expected is that the independent variables are orthogonal or have a correlation value with each other equal to zero. The multicollinearity test can be seen from the tolerance and variance inflation factors (VIF) values.

Decisions on multicollinearity tests are based on the assumption that the regression model is good and there is no multicollinearity if the tolerance value is greater than 0.10 or the VIF value is less than 10. Multicollinearity is said to have happened if the tolerance value is less than 0.10 and the VIF value is greater than 10.

3.5.2.3 Heteroscedasticity Test

Testing the inequality in variance between the residuals of one observation and another is the aim of the heteroscedasticity test. If the regression model exhibits symptoms of heteroscedasticity, the estimator obtained will be inefficient for both small and big samples. It is referred to as homoscedasticity if the variance of the residual from one observation does not change; heteroscedasticity if it changes. Homoscedasticity or heteroscedasticity cannot exist in a regression model to produce a decent one (Ghozali, 2021). The scatter plot graph and glejser test can illustrate this test. The basis of heteroscedasticity tests is based on the concept that heteroscedasticity has happened if a particular pattern, such as points forming a regular pattern (wavy, broadening, then narrowing), is present. In addition,

heteroscedasticity does not exist if there is no discernible pattern and the points are dispersed above and below the Y axis's zero point.

3.5.2.4 Autocorrelation Test

The purpose of the autocorrelation test is to determine whether residual errors in period t and errors in period t-1 in linear regression are correlated (Ghozali, 2021). Autocorrelation issues will surface if correlation happens. Several autocorrelation tests, including the Durbin-Watson (DW-Test), Run, and Lagrange Multiplier (LM) tests, can be carried out. In this research, the author uses the Lagrange Multiplier (LM) test to carry out an autocorrelation test, which will produce Breusch-Godfrey. This test can be carried out in research with a large sample of more than 100 and is carried out by performing regression on the residual variable. The testing criteria for the Lagrange Multiplier (LM) test are:

1. If the LAG residual parameter coefficient has a value of Sig. < 0.05, then there are symptoms of autocorrelation.

2. If the LAG residual parameter coefficient has a value of Sig. > 0.05, then there are no symptoms of autocorrelation.

3.5.3 Model Feasibility Test (F Test)

Finding out if all of the independent variables employed in the study have a combined effect on the dependent variable is the goal of the model feasibility test, also known as the F test. In order to assess whether the regression model is worthwhile to investigate, this test seeks to ascertain whether the independent variable, if it is present in the model, can explain the dependent variable. The 5% or 0.05 significance level is applied. When all independent variables explain the dependent variable and the significance value is less than 0.05, the research model

is considered viable since all independent variables are influencing the dependent variable at the same time. Meanwhile, suppose the significance value is > 0.05, all independent variables do not have a significant influence or cannot explain the dependent variable, so the research model is categorized as unfit (Ghozali, 2021).

3.5.4 Coefficient of Determination Test (R^2)

The degree to which the model can account for variations in the dependent variable is determined by the coefficient of determination test (R2). The coefficient of determination has a value between 0 and 1. The ability of the independent variable to explain variations in the dependent variable is relatively limited, as indicated by a reduced value of the coefficient of determination (0 < R2 < 1). In contrast, the independent variable offers nearly all of the information required to forecast dependent variations if the coefficient of determination is larger or closer to 1 (Ghozali, 2021).

3.5.5 Regression Analysis Test
3.5.5.1 Multiple Regression Analysis

Multiple linear regression analysis is an equation model analysis that explains the relationship between one dependent variable (response) and two or more independent variables (predictors). The purpose is to predict the value of the dependent variable if the independent variable is known, as well as to determine the direction of the relationship between the two variables. This research used a multiple linear regression model, specifically:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \varepsilon_{i,t}$$ ....(1)

Explanation:

Y : Cost stickiness of company i in period t

α   : Constant

$β_{1,2}$: Variable regression coefficient

X_1 : Tax avoidance of company i in period t

X_2 : Product market competition of company i in period t

$ε_{i,t}$: Error term

The statistical equation used is as follows:

$$CS = α + β_1 TA + β_2 PMC + ε_{i,t}$$ ....(1)

Explanation:

CS   : Cost stickiness of company i in period t

α   : Constant

$β_{1,2}$: Variable regression coefficient

TA   : Tax avoidance of company i in period t

PMC   : Product market competition of company i in period t

$ε_{i,t}$: Error term

3.5.5.2 Moderated Regression Analysis

Moderated regression analysis uses moderating variables to develop a relationship model. In a study, moderating variables serve to weaken or strengthen the relationship between the independent and dependent variables. Suppose there are no moderating variables in the relationship model, it might simply be a regression analysis, allowing the study of the independent and dependent variables to proceed without the need for a moderating variable. The regression model created to test the moderation hypothesis in this study is:

$$Y = α + β_1 X_1 + β_2 ZPROS + β_3 (X_1 * ZPROS) + ε_{i,t}$$ ....(2)

$$Y = \alpha + \beta_2 X_2 + \beta_3 \text{ZDEF} + \beta_4 (X_2 * \text{ZDEF}) + \varepsilon_{i,t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(3)$$

Explanation:

Y   : Cost stickiness of company i in period t

α   : Constant

$\beta_{1\text{-}4}$: Variable regression coefficient

X_1 : Tax avoidance of company i in period t

X_2 : Product market competition of company i in period t

ZDEF and ZPROS   : Moderation Business strategy defender and prospector

company i in period t

X_1*ZPROS   : Interaction of tax avoidance with business strategy

prospectors

X_2*ZDEF   : Interaction of product market competition with business

strategy defenders

$\varepsilon_{i,t}$: Error term

The statistical equation used is as follows:

$$\text{CS} = \alpha + \beta_1 \text{TA} + \beta_2 \text{PROS} + \beta_3 (\text{TA} * \text{PROS}) + \varepsilon_{i,t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots..(2)$$

$$\text{CS} = \alpha + \beta_2 \text{PMC} + \beta_3 \text{DEF} + \beta_4 (\text{TA} * \text{DEF}) + \varepsilon_{i,t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(3)$$

Explanation:

CS   : Cost stickiness of company i in period t

α   : Constant

$\beta_{1\text{-}4}$: Variable regression coefficient

TA   : Tax avoidance of company i in period t

PMC   : Product market competition of company i in period t

DEF and PROS   : Moderation Business strategy defender and prospector company i in period t

TA*PROS   : Interaction of tax avoidance with business strategy prospectors

PMC*DEF   : Interaction of product market competition with business strategy defenders

$\varepsilon_{i,t}$: Error term

If the regression coefficient, or β, which is generated by the interaction between the independent and moderating variables on the dependent variable, shows that the moderating variable has a significant effect on the dependent variable, then the moderation hypothesis is accepted. The moderating variable increases the effect of the independent variable on the dependent variable if the findings reveal a positive value. The moderating variable, on the other hand, lessens the effect of the independent variable on the dependent variable if the findings show a negative value.

According to Ghozali, (2018), moderating variables can be classified into several types. The beta (β) test or regression coefficient values can be used to identify the kind of moderating variable. The categories of moderating variables are as follows:

1. Pure moderator is a moderating variable that only acts as a moderating variable and does not act as an independent variable. The test results for pure moderator are if the moderating variable's beta (β_2) value is not significant and the beta

(β_3) interaction between the independent and moderating variables are significant.

2. Quasi moderator is a moderating variable that can have two roles simultaneously, namely as a moderating variable and an independent variable. The test results for quasi-moderators are if the beta (β_2) value of the moderating variable and the beta (β_3) interaction between the independent and moderating variables are significant.

3. Predictor moderator is a moderating variable acting as an independent variable in the relationship model between the independent and dependent variables. The test results for the moderator predictor are if the moderating variable's beta (β_2) value is significant and the beta (β_3) interaction between the independent and moderating variables is not significant.

4. Homologizer moderator is a moderating variable that has the potential to become a moderating variable. The test results for the moderator homologizer are that the beta (β_2) value of the moderating variable and the beta (β_3) interaction between the independent and moderating variables are not significant.

3.5.6 Hypothesis Testing (t-test)

Finding out how much the independent variable contributes to the variation in the dependent variable is the aim of the hypothesis test, also known as the t-test (Ghozali, 2021). The t-test was used to examine the regression results at a 95% confidence level or a 5% (0.05) research error rate. The hypothesis is accepted if the independent variable influences the dependent variable and the significance threshold is less than 0.05. The hypothesis is rejected if the significance value is

greater than 0.05, indicating that the independent variable does not affect on the dependent variable.

The value of the regression coefficient, which indicates the direction of the independent variable's effect on the dependent variable, can also be seen from the individual significance test or t-test. There is a unidirectional (positive) effect between the independent and dependent variables if the regression coefficient value is positive. There is an inverse (negative) effect between the independent and dependent variables if the regression coefficient value is negative.

CHAPTER IV

RESULTS AND DISCUSSION

4.1 Overview of Research Data

With the assist of IBM SPSS Statistics 26, this study employs multiple linear and moderated regression analyses to examine the potential effect of business strategy-moderated tax avoidance and product market competition on cost stickiness. A sample of manufacturing companies registered on the Indonesia Stock Exchange for the years 2013–2022 is used in this study. As a result, the financial and annual reports of manufacturing enterprises provided the data for this study.

Purposive sampling was used to choose the sample, and it was done by considering several criteria that the prior author had established. Thus, the author acquired 33 companies or 330 observation samples. The research regression model with 330 samples was not normally distributed, according to the results obtained after verifying the classical assumptions on all research variables. In order to get around this, the author filtered the sample once more, eliminating extreme data or outliers and obtaining a sample that ranged from 330 to 311 observation samples.

Table 4.1 Sample Filtering Criteria After Outliers

No.	Explanation	Total
1.	Manufacturing company listed on the Indonesia Stock Exchange for 2013-2022.	225
2.	Manufacturing companies that do not consistently publish financial reports and annual reports in 2013-2022.	(107)
3.	Manufacturing companies that publish financial reports and annual reports do not use the rupiah currency in 2013-2022.	(27)
4.	Manufacturing companies whose net profit before tax is negative or experience losses during 2013-2022.	(24)
5.	Manufacturing companies that do not have complete data for measuring all variables.	(34)
Number of Samples		33
Year of Observation (2013-2022)		10
Number of Samples During the Research Period		330

Continued on the next page

Table 4.2 Continuation

No.	Explanation	Total
	Outlier Data	(19)
	Number of Samples After Outliers	311

Source: www.idx.co.id (Processed by the Author, 2023)

4.2 Data Analysis Results

4.2.1 Descriptive Statistical Analysis

In order to make the image or details about the study topic easy to understand and interpret, descriptive statistical analysis is used. The details provided are the lowest, maximum, average (mean), and standard deviation of each variable. IBM SPSS Statistics 26 was used to conduct tests on 288 observation samples. The findings of this study's descriptive statistical analysis table are as follows:

Table 4.3 Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Tax Avoidance	311	-1,05	-,01	-,2888	,13717
Product Market Competition	311	-,15	,31	,0015	,08462
Business Strategy	311	0	1	,36	,481
Cost Stickiness	311	-,34	,53	,0879	,10679
Valid N (listwise)	311				

Source: Output IBM SPSS 26 (2023)

According to table 4.3 above, which includes 311 observation samples of manufacturing companies, the dependent variable (Y) in this study is cost stickiness, with a minimum value of -0.34, a maximum value of 0.53, an average (mean) of 0.0879, and a standard deviation of 0.10679. PT Merck Tbk (MERK) provides the lowest value for cost stickiness, which was -0.34 in 2013. PT Trisula International Tbk (TRIS) provides the highest value for cost stickiness, which was 0.53 in 2018.

The independent variable (X_1), namely tax avoidance, shows a minimum value of -1.05, a maximum value of -0.01, an average (mean) of -0.2888, and a

standard deviation of 0.13717. The minimum value obtained from tax avoidance comes from PT Trias Sentosa Tbk (TRST), which was -1.05 in 2019. The maximum value obtained from tax avoidance comes from PT Intanwijaya International Tbk (INCI), which was -0.01 in 2013.

Furthermore, the next independent variable (X_2), namely product market competition, shows a minimum value of -0.15, a maximum value of 0.31, an average (mean) of 0.0015, and a standard deviation of 0.08462. The minimum value obtained from the product market competition comes from PT Mayora Indah Tbk (MYOR), which is -0.15 in 2022. The maximum value obtained from the product market competition comes from PT Multi Bintang Indonesia Tbk (MLBI), namely 0.31 in 2018.

In addition, the moderating variable (Z) is a business strategy, where in this study, a dummy variable is used, namely 0 if the business strategy is a defender and 1 if the business strategy is a prospector. After tabulating the data, based on the grouping of company strategies, there were more companies with a defender strategy, namely 198 samples, and 113 other samples were companies with a prospector strategy. Thus, the minimum value obtained is 0, the maximum value is 1, the average (mean) is 0.36, and the standard deviation is 0.481.

4.2.2 Classical Assumption Test

4.2.2.1 Normality Test

The purpose of the normality test is to determine whether the independent and dependent variables in a regression model have a normal distribution or not. Based on decision-making, the Kolmogorov-Smirnov test can be used to determine

whether data is normally distributed. If the significance value is greater than 5% or 0.05, the data is normally distributed; if it is less than 5% or 0.05, the data is not normally distributed.

Previously, this research used a sample of 330 observation samples. After carrying out the Kolmogorov-Smirnov test with this sample, the following test results were obtained.

Table 4.4 Kolmogorov-Smirnov Normality Test Before Outliers

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		330
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	,12018020
Most Extreme Differences	Absolute	,074
	Positive	,074
	Negative	-,051
Test Statistic		,074
Asymp. Sig. (2-tailed)		,000[c]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

Source: Output IBM SPSS 26 (2023)

The variables in this study have a significance value of 0.000, as indicated by the previously mentioned Kolmogorov-Smirnov test findings with a sample of 330 observation samples; the resulting significance value is less than 5% or 0.05. Thus, the research data is not distributed normally. The author eliminated 19 observation samples that were thought to contain extreme values or outliers to overcome the data distribution's non-normality. Thus, using a sample of 311 observation samples, a Kolmogorov-Smirnov test was conducted based on this data. The Kolmogorov-Smirnov test yielded the following findings.

Table 4.5 Kolmogorov-Smirnov Normality Test After Outliers

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		311
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	,10348039
Most Extreme Differences	Absolute	,045
	Positive	,045
	Negative	-,036
Test Statistic		,045
Asymp. Sig. (2-tailed)		,200[c,d]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Source: Output IBM SPSS 26 (2023)

According to the table 4.5 above Kolmogorov-Smirnov test results, the study's variables have a significance value of 0.200. Outlier samples were used to create 311 observation samples, and the resulting significance value is known to be greater than 5% or 0.05. Thus, it may be said that the distribution of the research data is normal. In summary, the study involving 311 samples was deemed to have passed the normality test.

4.2.2.2 Multicollinearity Test

The purpose of the multicollinearity test is to determine whether the independent variables in a regression model are correlated. Among independent variables should not correlate if good regression model. The Variance Inflation Factor (VIF) and tolerance value can be used to determine the degree of multicollinearity. Multicollinearity does not exist if the tolerance value is > 0.10 and the VIF is less than 10; on the other hand, multicollinearity does occur if the tolerance value is less than 0.10 and the VIF is greater than 10.

Table 4.6 Multicollinearity Test

Coefficients[a]			
		Collinearity Statistics	
Model		Tolerance	VIF
1	(Constant)		
	Tax Avoidance	,979	1,022
	Product Market Competition	,988	1,012
	Business Strategy	,990	1,010
a. Dependent Variable: Cost Stickiness			

Source: Output IBM SPSS 26 (2023)

The results of the multicollinearity test are displayed in table 4.6 above, along with the tolerance and VIF values for each independent variable. It is determined that multicollinearity does not occur when the tolerance value is above or > 0.10 and the VIF value is below or < 10. Therefore, there are no signs of multicollinearity in the regression model used in this investigation.

4.2.2.3 Heteroscedasticity Test

The purpose of the heteroscedasticity test is to determine if there is variance inequality between the residuals in different observations inside a regression model. Examining the scatterplot graph is one technique to determine whether or not there are heteroscedasticity symptoms. Heteroscedasticity symptoms don't exist if there is no distinct pattern and the points tend to spread above or below the 0 on the Y axis.
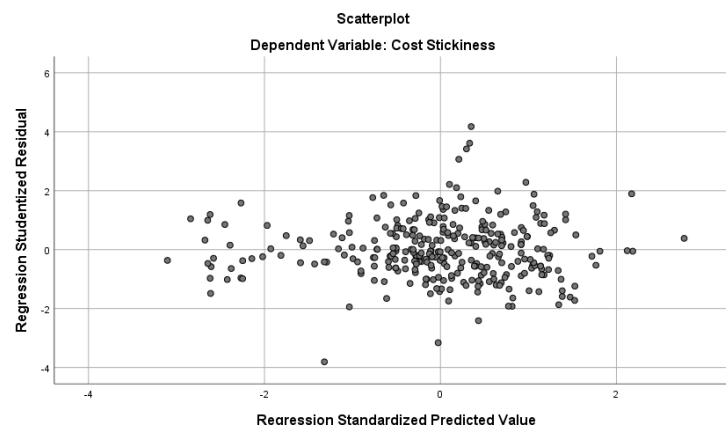
Figure 4.1 Heteroscedasticity Test Scatterplot
Source: Output IBM SPSS 26 (2023)

It is evident from the above scatterplot image findings of the heteroscedasticity test that the data in this study is randomly distributed and does not exhibit any particular patterns. Therefore, the data in this study do not exhibit heteroscedasticity symptoms as they are dispersed both above and below the Y-axis zero and do not create a particular pattern.

The Glejser test was used to verify once again, if the study data is indeed devoid of heteroscedasticity symptoms. If more than 0.05 is achieved for the significance value (Sig.), the data is considered non-heteroscedastic. The Glejser test results are listed below.

Table 4.7 Glejser Test

Coefficients^a		
Model	t	Sig.
1 (Constant)	9,395	,000
Tax Avoidance	1,463	,145
Product Market Competition	-,947	,344
Business Strategy	,083	,934
a. Dependent Variable: Cost Stickiness		

Source: Output IBM SPSS 26 (2023)

The Glejser test findings above show that this regression model is devoid of heteroscedasticity symptoms because the significance value is greater than 0.05.

4.2.2.4 Autocorrelation Test

The purpose of the autocorrelation test in research is to determine whether residual errors in period t and previous periods are correlated in a regression model. There are several techniques to do the autocorrelation test, and the Lagrange Multiplier (LM) is one of the autocorrelation tests. If the LAG residual parameter coefficient has a value of Sig. < 0.05, meaning there are symptoms of autocorrelation. Conversely, if the LAG residual parameter coefficient has a value of Sig. > 0.05, meaning there are no symptoms of autocorrelation.

Table 4.8 Autocorrelation Test

Coefficients^a					
	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	,002	,015		,151	,880
Tax Avoidance	,007	,044	,009	,154	,878
Product Market Competition	,002	,070	,002	,029	,977
Business Strategy	-,001	,012	-,007	-,120	,904
LAG_RES1	,109	,057	,109	1,897	,059
a. Dependent Variable: Unstandardized Residual					

Source: Output IBM SPSS 26 (2023)

As a result of the autocorrelation test utilizing the LM test, the null hypothesis was accepted and there were no autocorrelation symptoms in this investigation. The Asymp. Sig. (2-tailed) is 0.059 or greater than 0.05 (> 0.05).

4.2.3 Model Feasibility Test (F Test)

The F test, also known as the model feasibility test, is used to determine whether this regression model is appropriate for further research and to observe the simultaneous effects of independent variables on the dependent variable. By examining the significance level, the ANOVA table output displays the test findings. The independent variable affects the dependent variable simultaneously if the significance value is less than 0.05. Conversely, if the significance value is greater than 0.05, it indicates simultaneous influence of the independent variable on the dependent variable.

In this research, the feasibility test of the model was carried out three times. Where the first was to test the simultaneous influence of the independent variable on the dependent. Next, the second and third tests added moderating variables in the relationship between the independent and dependent variables.

Table 4.9 Model Feasibility Test (F Test) for Hypotheses 1 and 2

ANOVAᵃ						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,203	2	,101	9,359	,000ᵇ
	Residual	3,332	308	,011		
	Total	3,535	310			
a. Dependent Variable: Cost Stickiness						
b. Predictors: (Constant), Product Market Competition, Tax Avoidance						

Source: Output IBM SPSS 26 (2023)

Table 4.10 Model Feasibility Test (F Test) for Hypothesis 3

ANOVAᵃ						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,090	3	,030	2,676	,047ᵇ
	Residual	3,445	307	,011		
	Total	3,535	310			
a. Dependent Variable: Cost Stickiness						
b. Predictors: (Constant), Interaction of Tax Avoidance and Business Strategy Prospector, Tax Avoidance, Business Strategy Prospector						

Source: Output IBM SPSS 26 (2023)

Table 4.11 Model Feasibility Test (F Test) for Hypothesis 4

ANOVAᵃ						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,109	3	,036	3,268	,022ᵇ
	Residual	3,426	307	,011		
	Total	3,535	310			
a. Dependent Variable: Cost Stickiness						
b. Predictors: (Constant), Interaction of Product Market Competition and Business Strategy Defender, Business Strategy Defender, Product Market Competition						

Source: Output IBM SPSS 26 (2023)

Based on the F test results in ANOVA tables 4.9, 4.10, and 4.11, respectively, F values were obtained of 9.359, 2.676, and 3.268. In addition, based on the successive significance values obtained as 0.000, 0.047, and 0.022, where the values are less than 0.05 (< 0.05), it can be concluded that the independent variable has a simultaneous effect on the dependent variable and the model. This regression is worthy of further analysis.

4.2.4 Coefficient of Determination Test (R^2)

The coefficient of determination (R^2) test is used to assess how well the model explains changes in the dependent variable. The reduced coefficient of determination value indicates the independent variable's very limited capacity to

explain variations in the dependent variable. Conversely, if the coefficient of determination is nearer or more than 1, it indicates that the independent variable has a significant degree of predictive power for the dependent variable variation.

The model's coefficient of determination test (R^2) was run three times in this study. The initial step was assessing the independent variable's simultaneous effect on the dependent variable. Moderating variables were included in the relationship between the independent and dependent variables in the second and third tests.

Table 4.12 Coefficient of Determination Test for Hypotheses 1 and 2

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,239ª	,057	,051	,10402
a. Predictors: (Constant), Product Market Competition, Tax Avoidance				
b. Dependent Variable: Cost Stickiness				

Source: Output IBM SPSS 26 (2023)

Table 4.13 Coefficient of Determination Test for Hypothesis 3

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,160ª	,025	,016	,10593
a. Predictors: (Constant), Interaction Tax Avoidance and Business Strategy Prospector, Tax Avoidance, Business Strategy Prospector				
b. Dependent Variable: Cost Stickiness				

Source: Output IBM SPSS 26 (2023)

Table 4.14 Coefficient of Determination Test for Hypothesis 4

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,176ª	,031	,021	,10563
a. Predictors: (Constant), Interaction of Product Market Competition and Business Strategy Defender, Business Strategy Defender, Product Market Competition				
b. Dependent Variable: Cost Stickiness				

Source: Output IBM SPSS 26 (2023)

The adjusted R square values obtained were 0.051, 0.016, and 0.021 based on the coefficient of determination test (R_2) results in the Model Summary tables 4.12, 4.13, and 4.14, respectively. It indicates that the independent variables used in this research could only explain 5.1%, 1.6%, and 2.1% of the dependent

variables, respectively; the remaining 94.9%, 98.4%, and 97.9% can be explained by variables not examined in this study.

4.2.5 Regression Analysis Test

4.2.5.1 Multiple Linear Analysis

This research uses a multiple linear regression analysis model using IBM SPSS Statistics 26 software. This analysis is used to see the influence of the independent variable and the dependent variable. The following are the results of multiple linear analysis, namely as follows:

Table 4.15 Multiple Linear Analysis Test

Coefficients[a]			
		Unstandardized Coefficients	
Model		B	Std. Error
1	(Constant)	,126	,014
	Tax Avoidance	,132	,043
	Product Market Competition	-,238	,070
a. Dependent Variable: Cost Stickiness			

Source: Output IBM SPSS 26 (2023)

Based on table 4.15, the results of multiple linear regression testing in this study can be included in equation 1, namely as follows:

$$CS = 0,126 + 0,132 \text{ TA} - 0,238 \text{ PMC} + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(1)$$

From the regression equation above, it can be interpreted that:

1. The constant value from the results of the equation above shows a positive value, namely 0.126, meaning that when the independent variable is constant, the cost stickiness (Y) value increases by 0.126.

2. The coefficient value obtained by the positive tax avoidance variable is 0.132, which shows that when tax avoidance (X_1) increases by 1, cost stickiness (Y) will also increase by 0.132.

3. The coefficient value obtained by the product market competition variable is negative, namely -0.238, which shows that when product market competition (X$_2$) increases by 1, cost stickiness (Y) will decrease by -0.238.

4.2.5.2 Moderated Regression Analysis

This research uses moderated regression analysis (MRA) or carries out interaction tests in the regression model, where there are moderating variables in the relationship between the independent variable and the dependent variable. In this research, business strategy is divided into two, namely prospector and defender, which act as moderating variables and are expected to interact to either strengthen or weaken the relationship between the independent and dependent variables. The following are the results of the moderation regression analysis, namely as follows:

Table 4.16 Moderation Regression Analysis Test

Coefficients^a		
	Unstandardized Coefficients	
Model	B	Std. Error
1 (Constant)	,126	,016
Tax Avoidance	,116	,049
Business Strategy Prospector	-,006	,034
Interaction of Tax Avoidance and Business Strategy Prospector	,022	,113
a. Dependent Variable: Cost Stickiness		

Source: Output IBM SPSS 26 (2023)

Based on table 4.16 above, the results of the moderation regression analysis in this study can be included in equation 2, which is as follows:

$$CS = 0{,}126 + 0{,}116\,TA - 0{,}006\,PROS + 0{,}022\,(TA * PROS) + \varepsilon_{i,t}\ldots\ldots..(2)$$

From the regression equation above, it can be interpreted that:

1. The constant value from the results of the equation above shows a positive value, namely 0.126, meaning that when the independent variable is constant, the cost stickiness (Y) value increases by 0.126.

2. The coefficient value obtained by the positive tax avoidance variable is 0.116, which shows that when tax avoidance (X_1) increases by 1, cost stickiness (Y) will also increase by 0.116.

3. The coefficient value obtained by the negative business strategy prospector variable is -0.006, which shows that when the prospector's business strategy increases by 1, the cost stickiness (Y) will decrease by -0.006.

4. The moderation coefficient value of the interaction of the tax avoidance and business strategy defender variables is positive, namely 0.022, which shows that when tax avoidance increases by 1, there will be an increase in prospector business strategy. Thus, the ability to detect cost stickiness (Y) will decrease by 0.022.

Table 4.17 Moderation Regression Analysis Test

Coefficients^a			
		Unstandardized Coefficients	
Model		B	Std. Error
1	(Constant)	,082	,010
	Product Market Competition	-,222	,112
	Business Strategy Defender	,010	,012
	Interaction of Product Market Competition dan Business Strategy Defender	,010	,145
a. Dependent Variable: Cost Stickiness			

Source: Output IBM SPSS 26 (2023)

Based on table 4.17 above, the results of the moderation regression analysis in this study can be included in equation 3, which is as follows:

$$CS = 0{,}082 - 0{,}222 \, PMC + 0{,}010 \, DEF + 0{,}010 \, (PMC * DEF) + \varepsilon_{i,t} \dots\dots\dots(3)$$

From the regression equation above, it can be interpreted that:

1. The constant value from the results of the equation above shows a positive value, namely 0.082, meaning that when the independent variable is constant, the cost stickiness (Y) value increases by 0.082.

2. The coefficient value obtained by the product market competition variable is negative, namely -0.222, which shows that when product market competition (X_2) increases by 1, cost stickiness (Y) will decrease by -0.222.

3. The coefficient value obtained by the business strategy defender variable is positive, namely 0.010, which shows that when the business strategy defender increases by 1, the cost stickiness (Y) will increase by 0.010.

4. The moderation coefficient value of the interaction of product market competition and business strategy defender variables is positive, namely 0.010, which shows that when product market competition increases by 1, there will be an increase in business strategy defenders. Thus, the ability to detect cost stickiness (Y) will decrease by 0.010.

4.2.6 Hypothesis Test (t-test)

The purpose of hypothesis testing, commonly called the t-test, is to determine how much each independent variable contributes to explaining the dependent variable. The test concludes that the independent variable affects the dependent variable or that the research's hypothesis is supported if the significance value is less than 0.05 (< 0.05). The t-test findings are shown below, namely as follows:

Table 4.18 Test Hypothesis 1 and Hypothesis 2

Coefficients^a					

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	,126	,014		9,121	,000
	Tax Avoidance	,132	,043	,169	3,037	,003
	Product Market Competition	-,238	,070	-,189	-3,388	,001
a. Dependent Variable: Cost Stickiness						

Source: Output IBM SPSS 26 (2023)

Table 4.19 Test Hypothesis 3

	Coefficients^a					
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	,126	,016		7,667	,000
	Tax Avoidance	,116	,049	,149	2,376	,018
	Business Strategy Prospector	-,006	,034	-,029	-,191	,849
	Interaction of Tax Avoidance dan Business Strategy Prospector	,022	,113	,030	,199	,843
a. Dependent Variable: Cost Stickiness						

Source: Output IBM SPSS 26 (2023)

Table 4.20 Test Hypothesis 4

	Coefficients^a					
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	,082	,010		8,222	,000
	Product Market Competition	-,222	,112	-,176	-1,981	,048
	Business Strategy Defender	,010	,012	,043	,769	,442
	Interaction of Product Market Competition dan Business Strategy Defender	,010	,145	,006	,071	,943
a. Dependent Variable: Cost Stickiness						

Source: Output IBM SPSS 26 (2023)

Based on the results of the hypothesis test (t-test) in tables 4.18, 4.19, and

4.20 above, it can be interpreted that:

1. The Effect of Tax Avoidance on Cost Stickiness

Based on the t-test results in table 4.17 above, the tax avoidance variable has

a significance value of 0,003 or less than 0.05 (< 0.05). Besides that, the coefficient

value shows a positive value, namely 0.132. From the results of this research, it can

be concluded that tax avoidance has a positive effect on cost stickiness or the

research results show that H_1 is supported or accepted, then the hypothesis which

states that tax avoidance has a positive and significant effect on cost stickiness is

accepted.

2. The Effect of Product Market Competition on Cost Stickiness

Based on the t-test results in table 4.17 above, the product market competition variable has a significance value of 0.001 or less than 0.05 (< 0.05). Besides that, the coefficient value shows a negative value, namely -0.238. From the results of this research, it can be concluded that product market competition has a negative and significant effect on cost stickiness or the research results show that H_2 is supported or accepted, then the hypothesis which states that product market competition has a negative and significant effect on cost stickiness is **accepted**.

3. The Effect of Tax Avoidance on Cost Stickiness with Business Strategy Prospector as Moderation

Based on the t-test results in Table 4.18 above, the business strategy prospector variable has a significance value of 0.843 or more than 0.05 (> 0.05), and the coefficient value shows a positive value, namely 0.022. From the results of this research, it can be seen that the coefficient values β_2 and β_3 are not significant, which means that the homologizer moderator, namely the prospector business strategy variable, has the potential to be used as a moderating variable. However, the results of this research show that the business strategy prospector cannot moderate the influence of tax avoidance on cost stickiness, or the research results show that H_3 is not supported or rejected, so the hypothesis which states that the business strategy prospector strengthens the effect of tax avoidance on cost stickiness is **rejected**.

4. The Effect of Product Market Competition on Cost Stickiness with Business Strategy Defender as Moderation

Based on the t-test results in table 4.19 above, the business strategy prospector variable has a significance value of 0.943 or more than 0.05 (> 0.05), and the coefficient value shows a positive value, namely 0.010. From the results of this research, it can be seen that the coefficient values β_2 and β_3 are not significant, which means that the homologizer moderator, namely has the potential to be used as a moderating variable. However, the results of this research show that the business strategy defender cannot moderate the influence of product market competition on cost stickiness, or the research results show that H_4 is not supported or rejected, so the hypothesis which states that the business strategy defender strengthens the effect of product market competition on cost stickiness is **rejected**.

4.3 Discussion

4.3.1 Tax Avoidance on Cost Stickiness

Based on table 4.17, the research results show that tax avoidance has a positive and significant effect on cost stickiness, as indicated by a significance value of 0.003 and a coefficient value of 0.132, so it can be concluded that the first hypothesis is accepted. It means that the higher the tax avoidance carried out by the company, the higher the cost stickiness. In other words, cash savings made through tax avoidance can help managers cover some of the costs incurred due to maintaining unused resources.

The results of this research are in line with the agency theory put forward by Jensen, et al., (1976), where managers have an interest in maximizing the manager's

utility through status, power, compensation and prestige in terms of maintaining unused resources by covering part of the costs by using cash savings. In this way, managers who are able to maintain these resources show that the manager is capable of managing the company well, and managers can use these excess resources to improve company performance.

It also relates to the context of empire-building behavior, where managers are enthusiastic about increasing controllable resources when activity increases and are reluctant to reduce them when activity decreases. Thus, having excess cash from tax avoidance can help maintain excess resources that can be used to increase the size of the company beyond the optimal limit so that managers can obtain benefits such as increased reputation, status, power, and compensation.

The results of this research are different from research conducted by Xu et al., (2018) and Putra et al., (2020), which found that tax avoidance has a negative effect on cost stickiness. However, the results of this research are in line with research conducted by Restuti, (2023), which found that tax avoidance has a positive effect on cost stickiness. It means that excess cash resulting from tax avoidance can help managers retain unused resources. With this activity, the company will still incur high costs even though there is a decrease in sales activity, but these costs can be reduced by excess cash from tax avoidance carried out by the company.

4.3.2 Product Market Competition on Cost Stickiness

Based on table 4.17, the research results show that product market competition has a negative and significant influence on cost stickiness, as indicated by a significance value of 0.001 and a coefficient value of -0.238 so it can be concluded

that the second hypothesis is accepted. It means that the higher a company's product market competition, the lower the company's cost stickiness.

It is known that product market competition is one of the company's external monitoring mechanisms, so if product market competition is high, it will increase information symmetry between shareholders and managers because a high level of competition will encourage companies to provide more transparent financial information to the public, including shareholders. With this transparency, shareholders can use it to monitor the performance of managers in managing the company and prevent them from abusing company resources for personal interests.

The results of this research are in line with the agency theory put forward by Jensen, et al., (1976), where one of the agency problems can be caused by information asymmetry, which occurs if shareholders do not have information equivalent to managers regarding company performance. So, this can be exploited by managers for personal gain. Information asymmetry also occurs because shareholders and managers have different goals. On the one hand, shareholders want to maximize company performance and value, while managers want to maximize their welfare. Therefore, with high product market competition, which is one of the external controls, the company can minimize information asymmetry.

Additionally, when a company experiences a decline in sales, managers tend to have incentives or motivating factors not to cut unused resources. As a result, it can reduce company profits due to the costs incurred to maintain these unused resources. However, suppose the company is in a competitive product market or high product market competition, the managers will have an incentive to cut unused

resources, even when sales decline, because managers are aware, always motivated and innovate, and also increase efficiency in the tight competition so that the company does not lag and experience losses.

The results of this research are different from the results of research by Li et al., (2017), which found that product market competition has a positive effect on cost stickiness. However, the results of this research are in line with the research results of J. Li et al., (2021) found that product market competition has a negative effect on cost stickiness. It means that when product market competition is high, managers are motivated to reduce unused resources to continue to improve company innovation so as not to be left behind. Reducing these resources can reduce costs for unused resources and maintain the company's profitability when sales decline.

4.3.3 Tax Avoidance on Cost Stickiness Moderate by Business Strategy

Based on table 4.18, the research results show that business strategy cannot strengthen the effect of tax avoidance on cost stickiness as indicated by a significance value of 0.843 and a coefficient value of 0.022, so it can be concluded that the third hypothesis is rejected. Cash savings from tax avoidance can be utilized well by managers to maintain unused resources when sales decline. However, business strategy prospectors cannot strengthen this effect because companies with a prospector business strategy tend to have high uncertainty and risk. It causes companies with this strategy to prefer to develop innovation by investing in research and development costs rather than retaining unused resources.

This result is not in line with the agency theory put forward by Jensen, et al., (1976), which assumes that shareholders give managers authority to manage companies that are expected to achieve high performance and obtain profitability. To maximize performance, managers, as best as possible, choose and implement a business strategy that is tailored to the company's resources and the risks the company will face. The implementation of the prospector business strategy is expected to provide opportunities for managers to utilize tax avoidance in retaining unused resources.

However, conflicts of interest between managers and shareholders can occur because managers sometimes are motivated to benefit themselves. Implementing a prospector business strategy motivates managers to take risks and innovate, which can cause managers to be motivated to benefit themselves when making decisions. It can happen because cash savings originating from tax avoidance are used to increase manager compensation or invest in unprofitable projects rather than cover some of the costs of maintaining unused resources.

The results of this research are different from the research results of Higgins et al., (2015), which found that companies with a prospector strategy had a higher level of tax avoidance than defenders. Besides that, the results of this research are also different from the research results of Bhattarai, (2017) and Zhong et al., (2020), which found that cost stickiness in prospector companies is higher than defenders. The results of this research are also different from the results of research by Xu et al., (2018), which found that business strategy prospectors strengthen the relationship between tax avoidance and cost stickiness. The results of this research

show that regardless of the strategy the company implements, if shareholders are more active in encouraging managers to reduce costs or worry about risks related to tax avoidance, it will not affect on the company's cost stickiness level.

4.3.4 Product Market Competition on Cost Stickiness Moderate by Business Strategy

Based on table 4.19, the research results show that business strategy defenders cannot strengthen the effect of product market competition on cost stickiness as indicated by a significance value of 0.943 and a coefficient value of 0.010, so it can be concluded that the fourth hypothesis is rejected. It means that companies tend to reduce cost stickiness when facing competition in a competitive product market. However, the defender business strategy cannot strengthen this effect, which means that implementing this business strategy does not affect the manager's attitude towards cost stickiness in taking action when market competition increases.

The results of this research are not in line with the agency theory put forward by Jensen, et al., (1976), where in contractual relationship there tend to be conflicts of interest. So, to minimize this, an effective monitoring mechanism is needed, one of which is product market competition. Increasing product market competition can be considered as an effective form of external supervision because managers' performance in managing the company can be seen when competition occurs. So, competitive competition can motivate managers to cut unused resources quickly when cost stickiness occurs. With this activity, it is hoped that managers can help strengthen it by implementing the right business strategy, namely the defender business strategy. Increasing efficiency and cost-effectiveness in this strategy can

encourage managers to reduce unused resources when sales decline and product market competition increases. However, it turns out that this business strategy cannot strengthen managers' decisions regarding unused resources when there is a decline in sales and a highly competitive product market.

The results of this research are the same as the research results of J. Li et al., (2021), which found that the effect of product market competition on cost stickiness did not have a significant difference between prospector and defender strategies. When product market competition increases, companies that implement prospectors and defenders will respond quickly by reducing costs when decline sales occur.

As market competition becomes more competitive, managers are motivated to cut unused resources to increase efficiency and stay caught up in product development. It is true that the defender strategy is easy to adapt to any conditions and emphasizes efficiency, but this strategy tends to avoid the risk of reducing cost stickiness associated with pruning unused resources when sales decline. This risk is related to the difficulty of competing with innovative competitors because the latest trends and technology limit the company. Reducing cost stickiness is considered a risk because it can disrupt company stability. In addition, when a company cuts unused resources, it also requires costs, which can burden the company when sales decline, especially in defender strategy companies that emphasize cost efficiency. So, companies, especially managers, must have a strong incentive to maintain the stability of company expenditure.

CHAPTER V

CLOSING

5.1 Conclusion

Using business strategy as a moderator, this study examined the effect of tax avoidance and product market competition on cost stickiness in manufacturing sector companies listed on the Indonesia Stock Exchange (IDX) for 2013-2022. Based on the results of the analysis and discussion carried out in the previous chapter, the following conclusions can be drawn:

1. Tax avoidance has a positive and significant effect on cost stickiness, so the hypothesis in this research is supported. Savings or excess cash from tax avoidance can help managers cover the costs of maintaining unused resources, especially when sales decline so that the company's cost stickiness increases.

2. Product market competition has a negative and significant effect on cost stickiness, so the hypothesis in this research is supported. When a company is in a highly competitive product market, and there is a decline in sales activity, managers tend to respond by cutting unused resources more quickly to maintain company profitability so that cost stickiness decreases.

3. The prospector's business strategy cannot strengthen the effect of tax avoidance on cost stickiness. The implementation of any strategy by the company, if shareholders are more active in encouraging managers to reduce costs or are concerned about risks related to tax avoidance, will not affect the company's cost stickiness level.

4. The defender's business strategy cannot strengthen the effect of product market competition on cost stickiness. Increasing product market competition encourages managers to cut unused resources. A defender business strategy cannot help strengthen efforts to cut unused resources when sales decline, because this activity is seen as risking disrupting the company's stability and competitive ability, as well as requiring burdensome additional costs.

5.2 Suggestions

It is intended that the research's findings will aid in future studies, serve as a source of knowledge for decision-making, and give advantages. For this reason, the author offers a number of recommendations and commentary, specifically the following:

1. For companies, tax avoidance is a legal strategy used by companies to lower tax liability. Therefore, it is required of companies to be able to apply these regulations sensibly to support managers in managing the company's unused resources.

2. For investors, it is advisable to consider that other factors can determine a company's cost stickiness, not only tax avoidance, product market competition, and business strategy alone. Other factors, such as economic conditions, can also play a role in cost stickiness. Investors need to consider other factors to produce a more accurate assessment of the potential for company cost stickiness.

3. Future researchers should use other measurements that can describe the variables of tax avoidance, product market competition, cost stickiness, and

business strategy because the author realizes some limitations require the author not to use several measurements related to business strategy variables. In addition, future researchers can expand the sample to non-financial companies.

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APPENDIX

Appendix 1: Sample List of Manufacturing Companies for the 2013-2022 Period

No.	Code	Company Name
1.	ALDO	Alkindo Naratama Tbk
2.	ARNA	Arwana Citramulia Tbk
3.	ASII	Astra International Tbk
4.	AUTO	Astra Otoparts Tbk
5.	CPIN	Charoen Pokphand Indonesia Tbk
6.	DLTA	Delta Djakarta Tbk
7.	DVLA	Darya Varia Laboratoria Tbk
8.	GGRM	Gudang Garam Tbk
9.	HMSP	Hanjaya Mandala Sampoerna Tbk
10.	ICBP	Indofood CBP Sukses Makmur Tbk
11.	IGAR	Champion Pacific Indonesia Tbk
12.	INCI	Intan Wijaya International Tbk
13.	INDF	Indofood Sukses Makmur Tbk
14.	INTP	Indocement Tunggal Prakasa Tbk
15.	JPFA	Japfa Comfeed Indonesia Tbk
16.	KAEF	Kimia Farma Tbk
17.	KBLF	Kalbe Farma Tbk
18.	KDSI	Kedawung Setia Industrial Tbk
19.	MERK	Merck Indonesia Tbk
20.	MLBI	Multi Bintang Indonesia Tbk
21.	MYOR	Mayora Indah Tbk
22.	PYFA	Pyridam Farma Tbk
23.	ROTI	Nippon Indosari Corpindo Tbk
24.	SKLT	Sekar Laut Tbk
25.	SMGR	Semen Indonesia (Persero) Tbk
26.	SMSM	Selamat Sempurna Tbk
27.	STTP	Siantar Top Tbk
28.	TRIS	Trisula International Tbk
29.	TRST	Trias Sentosa Tbk
30.	TSPC	Tempo Scan Pacific Tbk
31.	ULTJ	Ultra Jaya Milk Industry and Trading Company Tbk
32.	UNVR	Unilever Indonesia Tbk
33.	WIIM	Wismilak Inti Makmur Tbk

Appendix 2: Calculation or Measurement of Research Variables

1. **Tax Avoidance Measurement Tabulation**

No.	Year	Code	Cash Taxes Paid	Pretax Income	CETR
1	2013	ALDO	6.456.902.950	33.591.990.313	-0,19
2	2014	ALDO	10.519.388.486	28.214.669.992	-0,37
3	2015	ALDO	9.625.279.857	32.453.914.799	-0,30
4	2016	ALDO	10.397.020.319	33.847.325.358	-0,31
5	2017	ALDO	11.533.291.195	38.621.790.950	-0,30
6	2018	ALDO	12.120.461.559	117.027.542.698	-0,10
7	2019	ALDO	22.545.291.220	121.937.309.241	-0,18
8	2020	ALDO	24.962.387.219	83.963.236.519	-0,30
9	2021	ALDO	29.914.777.877	129.768.148.235	-0,23
10	2022	ALDO	41.975.858.329	84.844.590.413	-0,49
11	2013	ARNA	74.307.308.576	316.349.602.459	-0,23
12	2014	ARNA	99.606.289.049	348.684.411.976	-0,29
13	2015	ARNA	66.524.751.002	95.514.316.424	-0,70
14	2016	ARNA	30.383.985.120	123.838.299.924	-0,25
15	2017	ARNA	34.886.327.895	166.203.941.034	-0,21
16	2018	ARNA	55.097.062.037	211.729.940.176	-0,26
17	2019	ARNA	66.496.366.102	291.607.365.374	-0,23
18	2020	ARNA	58.526.382.894	420.626.406.830	-0,14
19	2021	ARNA	115.307.775.174	609.653.614.511	-0,19
20	2022	ARNA	163.911.947.270	746.096.093.997	-0,22
21	2013	ASII	6.382.000.000.000	27.523.000.000.000	-0,23
22	2014	ASII	5.588.000.000.000	27.058.000.000.000	-0,21
23	2015	ASII	6.991.000.000.000	19.630.000.000.000	-0,36
24	2016	ASII	5.426.000.000.000	22.253.000.000.000	-0,24
25	2017	ASII	6.369.000.000.000	29.137.000.000.000	-0,22
26	2018	ASII	8.010.000.000.000	34.995.000.000.000	-0,23
27	2019	ASII	10.943.000.000.000	34.054.000.000.000	-0,32
28	2020	ASII	5.359.000.000.000	21.741.000.000.000	-0,25
29	2021	ASII	6.285.000.000.000	32.350.000.000.000	-0,19
30	2022	ASII	11.463.000.000.000	50.390.000.000.000	-0,23
31	2013	AUTO	250.730.000.000	1.210.355.000.000	-0,21
32	2014	AUTO	287.357.000.000	1.091.040.000.000	-0,26
33	2015	AUTO	206.244.000.000	433.596.000.000	-0,48
34	2016	AUTO	180.533.000.000	648.907.000.000	-0,28
35	2017	AUTO	289.787.000.000	711.936.000.000	-0,41
36	2018	AUTO	277.099.000.000	861.563.000.000	-0,32

No.	Year	Code	Cash Taxes Paid	Pretax Income	CETR
37	2019	AUTO	223.688.000.000	1.119.858.000.000	-0,20
38	2020	AUTO	144.675.000.000	116.071.000.000	-1,25
39	2021	AUTO	180.883.000.000	755.129.000.000	-0,24
40	2022	AUTO	269.483.000.000	1.730.906.000.000	-0,16
41	2013	CPIN	778.138.000.000	3.451.333.000.000	-0,23
42	2014	CPIN	1.008.578.000.000	2.105.972.000.000	-0,48
43	2015	CPIN	628.226.000.000	2.185.208.000.000	-0,29
44	2016	CPIN	564.587.000.000	3.983.661.000.000	-0,14
45	2017	CPIN	1.452.945.000.000	3.259.822.000.000	-0,45
46	2018	CPIN	918.248.000.000	5.907.351.000.000	-0,16
47	2019	CPIN	1.949.684.000.000	4.608.641.000.000	-0,42
48	2020	CPIN	1.166.389.000.000	4.767.698.000.000	-0,24
49	2021	CPIN	1.105.266.000.000	4.633.546.000.000	-0,24
50	2022	CPIN	1.326.129.000.000	3.537.180.000.000	-0,37
51	2013	DLTA	100.076.713.000	358.395.988.000	-0,28
52	2014	DLTA	101.008.512.000	380.086.736.000	-0,27
53	2015	DLTA	69.234.006.000	250.197.742.000	-0,28
54	2016	DLTA	77.889.052.000	315.715.966.000	-0,25
55	2017	DLTA	95.717.980.000	369.012.853.000	-0,26
56	2018	DLTA	94.339.700.000	441.248.118.000	-0,21
57	2019	DLTA	87.631.571.000	412.437.215.000	-0,21
58	2020	DLTA	59.940.288.000	164.704.480.000	-0,36
59	2021	DLTA	52.487.053.000	240.865.871.000	-0,22
60	2022	DLTA	70.501.581.000	294.211.660.000	-0,24
61	2013	DVLA	58.371.103.000	175.756.777.000	-0,33
62	2014	DVLA	49.087.301.000	106.757.491.000	-0,46
63	2015	DVLA	35.265.995.000	144.437.708.000	-0,24
64	2016	DVLA	40.763.252.000	214.417.056.000	-0,19
65	2017	DVLA	53.649.116.000	226.147.921.000	-0,24
66	2018	DVLA	76.348.303.000	272.843.904.000	-0,28
67	2019	DVLA	79.897.505.000	301.250.035.000	-0,27
68	2020	DVLA	57.943.498.000	214.069.167.000	-0,27
69	2021	DVLA	83.451.430.000	211.511.203.000	-0,39
70	2022	DVLA	61.603.009.000	201.073.217.000	-0,31
71	2013	GGRM	1.522.688.000.000	5.936.204.000.000	-0,26
72	2014	GGRM	1.651.205.000.000	7.254.713.000.000	-0,23
73	2015	GGRM	1.830.188.000.000	8.635.275.000.000	-0,21
74	2016	GGRM	2.405.902.000.000	8.931.136.000.000	-0,27

No.	Year	Code	Cash Taxes Paid	Pretax Income	CETR
75	2017	GGRM	2.638.900.000.000	10.436.512.000.000	-0,25
76	2018	GGRM	2.897.496.000.000	10.479.242.000.000	-0,28
77	2019	GGRM	3.204.640.000.000	14.487.736.000.000	-0,22
78	2020	GGRM	2.251.510.000.000	9.663.133.000.000	-0,23
79	2021	GGRM	1.224.291.000.000	7.286.846.000.000	-0,17
80	2022	GGRM	1.179.292.000.000	3.646.521.000.000	-0,32
81	2013	HMSP	3.652.947.000.000	14.509.710.000.000	-0,25
82	2014	HMSP	4.002.835.000.000	13.718.299.000.000	-0,29
83	2015	HMSP	3.824.285.000.000	13.932.644.000.000	-0,27
84	2016	HMSP	3.826.053.000.000	17.011.447.000.000	-0,22
85	2017	HMSP	4.337.944.000.000	16.894.806.000.000	-0,26
86	2018	HMSP	4.412.498.000.000	17.961.269.000.000	-0,25
87	2019	HMSP	4.630.741.000.000	18.259.423.000.000	-0,25
88	2020	HMSP	2.948.120.000.000	11.161.466.000.000	-0,26
89	2021	HMSP	6.325.778.000.000	9.152.166.000.000	-0,69
90	2022	HMSP	1.909.078.000.000	8.273.059.000.000	-0,23
91	2013	ICBP	916.276.000.000	2.966.990.000.000	-0,31
92	2014	ICBP	1.106.699.000.000	3.445.380.000.000	-0,32
93	2015	ICBP	1.189.923.000.000	4.009.634.000.000	-0,30
94	2016	ICBP	1.530.642.000.000	4.989.254.000.000	-0,31
95	2017	ICBP	1.862.383.000.000	5.206.561.000.000	-0,36
96	2018	ICBP	2.005.525.000.000	6.446.785.000.000	-0,31
97	2019	ICBP	1.615.934.000.000	7.436.972.000.000	-0,22
98	2020	ICBP	1.684.628.000.000	9.958.647.000.000	-0,17
99	2021	ICBP	2.817.278.000.000	9.950.170.000.000	-0,28
100	2022	ICBP	2.231.362.000.000	7.525.385.000.000	-0,30
101	2013	IGAR	19.777.728.355	48.442.303.122	-0,41
102	2014	IGAR	16.346.060.988	76.194.715.546	-0,21
103	2015	IGAR	20.729.430.704	63.236.346.206	-0,33
104	2016	IGAR	20.320.848.027	95.774.588.017	-0,21
105	2017	IGAR	33.389.113.795	95.764.791.063	-0,35
106	2018	IGAR	27.168.554.186	61.747.960.127	-0,44
107	2019	IGAR	21.766.110.579	83.534.447.014	-0,26
108	2020	IGAR	18.889.933.731	83.166.786.329	-0,23
109	2021	IGAR	28.512.723.615	135.948.996.651	-0,21
110	2022	IGAR	50.645.972.528	133.379.287.740	-0,38
111	2013	INCI	80.442.329	10.690.815.380	-0,01
112	2014	INCI	389.341.903	11.486.543.972	-0,03

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113	2015	INCI	1.926.211.803	19.220.641.866	-0,10
114	2016	INCI	3.003.783.211	13.294.748.095	-0,23
115	2017	INCI	5.929.554.922	22.077.467.345	-0,27
116	2018	INCI	7.900.976.627	22.040.417.272	-0,36
117	2019	INCI	3.154.398.371	18.037.062.772	-0,17
118	2020	INCI	5.908.804.480	38.393.758.749	-0,15
119	2021	INCI	11.782.387.104	13.788.739.152	-0,85
120	2022	INCI	3.664.970.954	31.504.050.176	-0,12
121	2013	INDF	1.972.114.000.000	4.000.751.000.000	-0,49
122	2014	INDF	2.398.644.000.000	6.340.185.000.000	-0,38
123	2015	INDF	2.333.641.000.000	4.962.084.000.000	-0,47
124	2016	INDF	2.678.358.000.000	7.385.228.000.000	-0,36
125	2017	INDF	3.422.799.000.000	7.594.822.000.000	-0,45
126	2018	INDF	3.460.973.000.000	7.446.966.000.000	-0,46
127	2019	INDF	2.361.672.000.000	8.749.397.000.000	-0,27
128	2020	INDF	2.784.615.000.000	12.426.334.000.000	-0,22
129	2021	INDF	3.577.269.000.000	14.488.653.000.000	-0,25
130	2022	INDF	3.775.947.000.000	12.318.765.000.000	-0,31
131	2013	INTP	3.723.903.000.000	6.595.154.000.000	-0,56
132	2014	INTP	3.708.523.000.000	6.814.636.000.000	-0,54
133	2015	INTP	3.123.604.000.000	5.644.576.000.000	-0,55
134	2016	INTP	2.542.764.000.000	4.145.632.000.000	-0,61
135	2017	INTP	1.897.579.000.000	2.287.274.000.000	-0,83
136	2018	INTP	1.897.226.000.000	1.400.228.000.000	-1,35
137	2019	INTP	1.398.761.000.000	2.274.427.000.000	-0,61
138	2020	INTP	311.374.000.000	2.148.328.000.000	-0,14
139	2021	INTP	412.171.000.000	2.234.002.000.000	-0,18
140	2022	INTP	330.352.000.000	2.289.309.000.000	-0,14
141	2013	JPFA	328.117.000.000	895.947.000.000	-0,37
142	2014	JPFA	389.169.000.000	551.409.000.000	-0,71
143	2015	JPFA	132.844.000.000	697.677.000.000	-0,19
144	2016	JPFA	419.397.000.000	2.766.591.000.000	-0,15
145	2017	JPFA	674.877.000.000	1.710.054.000.000	-0,39
146	2018	JPFA	788.421.000.000	2.918.114.000.000	-0,27
147	2019	JPFA	1.222.093.000.000	2.494.477.000.000	-0,49
148	2020	JPFA	335.394.000.000	1.679.091.000.000	-0,20
149	2021	JPFA	796.896.000.000	2.793.847.000.000	-0,29
150	2022	JPFA	767.234.000.000	1.954.529.000.000	-0,39

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151	2013	KAEF	99.023.130.401	284.125.432.299	-0,35
152	2014	KAEF	50.181.904.235	315.611.059.635	-0,16
153	2015	KAEF	68.190.694.925	354.904.735.867	-0,19
154	2016	KAEF	72.733.809.240	383.025.924.670	-0,19
155	2017	KAEF	71.236.100.650	449.709.762.422	-0,16
156	2018	KAEF	227.541.327.000	755.296.047.000	-0,30
157	2019	KAEF	219.381.335.000	38.315.488.000	-5,73
158	2020	KAEF	48.576.593.000	73.359.099.000	-0,66
159	2021	KAEF	157.074.688.000	392.883.409.000	-0,40
160	2022	KAEF	273.403.929.000	49.622.055.000	-5,51
161	2013	KBLF	650.904.671.554	2.572.522.717.231	-0,25
162	2014	KBLF	650.088.972.907	2.765.593.462.800	-0,24
163	2015	KBLF	700.482.780.347	2.720.881.244.459	-0,26
164	2016	KBLF	752.684.488.364	3.091.188.460.230	-0,24
165	2017	KBLF	782.316.500.559	3.241.186.725.992	-0,24
166	2018	KBLF	838.106.813.718	3.306.399.669.021	-0,25
167	2019	KBLF	839.509.478.376	3.402.616.824.533	-0,25
168	2020	KBLF	602.524.461.985	3.627.632.574.744	-0,17
169	2021	KBLF	967.557.071.735	4.143.264.634.774	-0,23
170	2022	KBLF	1.165.196.790.019	4.458.896.905.350	-0,26
171	2013	KDSI	13.454.239.584	47.175.692.006	-0,29
172	2014	KDSI	15.676.932.626	59.575.756.481	-0,26
173	2015	KDSI	19.198.665.232	14.890.268.268	-1,29
174	2016	KDSI	7.916.973.243	63.697.916.133	-0,12
175	2017	KDSI	27.224.211.124	93.363.070.902	-0,29
176	2018	KDSI	33.565.882.403	103.955.745.914	-0,32
177	2019	KDSI	33.716.195.879	94.926.825.515	-0,36
178	2020	KDSI	19.969.593.099	82.952.707.385	-0,24
179	2021	KDSI	24.182.566.292	94.013.184.924	-0,26
180	2022	KDSI	37.029.286.138	108.084.354.815	-0,34
181	2013	MERK	57.165.500.000	196.772.132.000	-0,29
182	2014	MERK	71.967.228.000	205.958.418.000	-0,35
183	2015	MERK	56.132.947.000	193.940.841.000	-0,29
184	2016	MERK	68.360.716.000	214.916.161.000	-0,32
185	2017	MERK	63.274.314.000	41.895.576.000	-1,51
186	2018	MERK	68.497.632.000	50.208.396.000	-1,36
187	2019	MERK	368.134.832.000	125.899.182.000	-2,92
188	2020	MERK	9.950.605.000	105.999.860.000	-0,09

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189	2021	MERK	27.191.536.000	190.499.576.000	-0,14
190	2022	MERK	74.387.179.000	237.778.369.000	-0,31
191	2013	MLBI	345.562.000.000	1.576.945.000.000	-0,22
192	2014	MLBI	339.888.000.000	1.078.378.000.000	-0,32
193	2015	MLBI	182.909.000.000	675.572.000.000	-0,27
194	2016	MLBI	252.522.000.000	1.320.186.000.000	-0,19
195	2017	MLBI	467.798.000.000	1.780.020.000.000	-0,26
196	2018	MLBI	500.380.000.000	1.671.912.000.000	-0,30
197	2019	MLBI	456.918.000.000	1.626.612.000.000	-0,28
198	2020	MLBI	246.674.000.000	396.470.000.000	-0,62
199	2021	MLBI	174.654.000.000	877.781.000.000	-0,20
200	2022	MLBI	323.522.000.000	1.246.487.000.000	-0,26
201	2013	MYOR	345.516.499.221	1.356.073.496.557	-0,25
202	2014	MYOR	643.728.676.106	529.267.706.614	-1,22
203	2015	MYOR	207.827.520.531	1.640.494.765.801	-0,13
204	2016	MYOR	535.595.541.066	1.845.683.269.238	-0,29
205	2017	MYOR	588.507.286.754	2.186.884.603.474	-0,27
206	2018	MYOR	724.353.877.022	2.381.942.198.855	-0,30
207	2019	MYOR	548.485.380.356	2.704.466.581.011	-0,20
208	2020	MYOR	616.475.395.467	2.683.890.279.936	-0,23
209	2021	MYOR	407.213.188.137	1.549.648.556.686	-0,26
210	2022	MYOR	382.467.836.657	2.506.057.517.934	-0,15
211	2013	PYFA	1.758.625.881	8.499.928.945	-0,21
212	2014	PYFA	1.855.509.852	4.211.187.980	-0,44
213	2015	PYFA	1.605.929.780	4.554.931.095	-0,35
214	2016	PYFA	2.274.563.489	7.053.407.169	-0,32
215	2017	PYFA	2.094.731.164	9.599.280.773	-0,22
216	2018	PYFA	2.961.618.997	11.317.263.776	-0,26
217	2019	PYFA	3.136.873.781	12.518.822.477	-0,25
218	2020	PYFA	4.303.412.969	29.642.208.781	-0,15
219	2021	PYFA	5.680.648.487	8.811.330.955	-0,64
220	2022	PYFA	4.757.067.397	263.080.101.103	-0,02
221	2013	ROTI	55.774.109.123	210.804.904.162	-0,26
222	2014	ROTI	48.104.729.139	252.857.341.173	-0,19
223	2015	ROTI	76.292.405.931	378.251.615.088	-0,20
224	2016	ROTI	101.019.619.984	369.416.841.698	-0,27
225	2017	ROTI	49.102.534.677	186.147.334.530	-0,26
226	2018	ROTI	20.320.139.824	186.936.324.915	-0,11

No.	Year	Code	Cash Taxes Paid	Pretax Income	CETR
227	2019	ROTI	55.180.972.607	347.098.820.613	-0,16
228	2020	ROTI	32.380.538.836	160.357.537.779	-0,20
229	2021	ROTI	50.769.925.062	378.946.292.335	-0,13
230	2022	ROTI	82.057.564.271	572.782.719.985	-0,14
231	2013	SKLT	5.857.452.848	16.597.785.538	-0,35
232	2014	SKLT	6.541.475.709	24.044.381.630	-0,27
233	2015	SKLT	15.451.631.432	27.376.238.223	-0,56
234	2016	SKLT	8.026.883.297	25.166.206.536	-0,32
235	2017	SKLT	8.237.550.980	27.370.565.356	-0,30
236	2018	SKLT	6.739.406.776	39.567.679.343	-0,17
237	2019	SKLT	17.452.206.884	56.782.206.578	-0,31
238	2020	SKLT	9.276.903.406	55.673.983.557	-0,17
239	2021	SKLT	10.878.886.166	101.725.399.549	-0,11
240	2022	SKLT	26.824.618.523	92.439.536.022	-0,29
241	2013	SMGR	1.611.031.641.000	6.920.399.734.000	-0,23
242	2014	SMGR	1.540.546.571.000	7.077.276.008.000	-0,22
243	2015	SMGR	1.343.605.458.000	5.850.923.497.000	-0,23
244	2016	SMGR	1.544.512.150.000	5.084.621.543.000	-0,30
245	2017	SMGR	1.147.544.131.000	2.253.893.318.000	-0,51
246	2018	SMGR	542.907.000.000	4.104.959.000.000	-0,13
247	2019	SMGR	616.721.000.000	3.195.775.000.000	-0,19
248	2020	SMGR	1.195.316.000.000	3.488.650.000.000	-0,34
249	2021	SMGR	1.227.909.000.000	3.537.704.000.000	-0,35
250	2022	SMGR	1.035.764.000.000	3.298.835.000.000	-0,31
251	2013	SMSM	93.001.000.000	461.143.000.000	-0,20
252	2014	SMSM	136.033.000.000	542.028.000.000	-0,25
253	2015	SMSM	150.513.000.000	583.717.000.000	-0,26
254	2016	SMSM	135.020.000.000	658.208.000.000	-0,21
255	2017	SMSM	167.001.000.000	720.638.000.000	-0,23
256	2018	SMSM	193.018.000.000	828.281.000.000	-0,23
257	2019	SMSM	201.818.000.000	822.042.000.000	-0,25
258	2020	SMSM	137.832.000.000	684.268.000.000	-0,20
259	2021	SMSM	167.902.000.000	922.168.000.000	-0,18
260	2022	SMSM	257.848.000.000	1.172.002.000.000	-0,22
261	2013	STTP	31.267.407.734	143.095.332.679	-0,22
262	2014	STTP	53.340.816.264	167.977.695.749	-0,32
263	2015	STTP	51.222.193.820	232.005.398.773	-0,22
264	2016	STTP	45.345.049.181	217.746.308.540	-0,21

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265	2017	STTP	60.687.733.168	288.545.819.603	-0,21
266	2018	STTP	89.810.904.314	324.694.650.175	-0,28
267	2019	STTP	92.823.915.898	607.043.293.422	-0,15
268	2020	STTP	115.958.847.906	773.607.195.121	-0,15
269	2021	STTP	158.394.616.584	765.188.720.115	-0,21
270	2022	STTP	134.091.037.290	756.723.520.605	-0,18
271	2013	TRIS	17.310.866.949	68.073.504.325	-0,25
272	2014	TRIS	21.224.951.361	48.442.710.589	-0,44
273	2015	TRIS	16.322.021.233	58.813.295.821	-0,28
274	2016	TRIS	20.051.389.227	47.947.291.257	-0,42
275	2017	TRIS	31.044.707.988	21.833.987.786	-1,42
276	2018	TRIS	18.521.247.563	56.044.065.654	-0,33
277	2019	TRIS	22.602.261.775	63.948.501.122	-0,35
278	2020	TRIS	10.961.688.527	11.884.360.558	-0,92
279	2021	TRIS	4.035.712.751	33.542.940.532	-0,12
280	2022	TRIS	12.414.254.362	91.700.254.580	-0,14
281	2013	TRST	28.704.607.737	72.553.777.173	-0,40
282	2014	TRST	38.887.839.612	63.330.489.681	-0,61
283	2015	TRST	33.478.892.134	51.097.812.346	-0,66
284	2016	TRST	21.357.853.296	23.194.967.133	-0,92
285	2017	TRST	15.003.168.012	12.513.681.277	-1,20
286	2018	TRST	20.328.919.188	36.216.675.439	-0,56
287	2019	TRST	18.416.717.612	17.514.074.859	-1,05
288	2020	TRST	9.445.689.085	46.317.333.298	-0,20
289	2021	TRST	25.918.029.281	218.346.000.000	-0,12
290	2022	TRST	57.881.000.000	167.990.000.000	-0,34
291	2013	TSPC	457.674.133.782	829.935.403.086	-0,55
292	2014	TSPC	427.737.845.359	738.305.933.705	-0,58
293	2015	TSPC	457.485.911.004	707.110.932.867	-0,65
294	2016	TSPC	466.394.302.993	718.958.200.369	-0,65
295	2017	TSPC	538.603.804.385	744.090.262.873	-0,72
296	2018	TSPC	526.447.491.388	727.700.178.905	-0,72
297	2019	TSPC	608.007.758.084	796.220.911.472	-0,76
298	2020	TSPC	521.052.950.620	1.064.448.534.874	-0,49
299	2021	TSPC	658.489.503.260	1.098.370.417.471	-0,60
300	2022	TSPC	648.564.325.105	1.329.822.971.089	-0,49
301	2013	ULTJ	170.436.720.813	436.720.187.873	-0,39
302	2014	ULTJ	125.695.094.342	374.957.616.094	-0,34

No.	Year	Code	Cash Taxes Paid	Pretax Income	CETR
303	2015	ULTJ	111.720.131.452	700.675.250.229	-0,16
304	2016	ULTJ	253.029.785.147	932.482.782.652	-0,27
305	2017	ULTJ	347.000.000.000	1.035.192.000.000	-0,34
306	2018	ULTJ	291.922.000.000	949.018.000.000	-0,31
307	2019	ULTJ	278.947.000.000	1.375.359.000.000	-0,20
308	2020	ULTJ	321.089.000.000	1.421.517.000.000	-0,23
309	2021	ULTJ	331.696.000.000	1.541.932.000.000	-0,22
310	2022	ULTJ	427.799.000.000	1.288.998.000.000	-0,33
311	2013	UNVR	1.806.103.000.000	7.158.808.000.000	-0,25
312	2014	UNVR	1.859.089.000.000	7.927.652.000.000	-0,23
313	2015	UNVR	1.910.609.000.000	7.829.490.000.000	-0,24
314	2016	UNVR	2.066.894.000.000	8.571.885.000.000	-0,24
315	2017	UNVR	2.406.049.000.000	9.371.661.000.000	-0,26
316	2018	UNVR	2.340.586.000.000	12.148.087.000.000	-0,19
317	2019	UNVR	3.120.471.000.000	9.901.772.000.000	-0,32
318	2020	UNVR	1.693.036.000.000	9.206.869.000.000	-0,18
319	2021	UNVR	1.848.151.000.000	7.496.592.000.000	-0,25
320	2022	UNVR	1.759.317.000.000	6.993.803.000.000	-0,25
321	2013	WIIM	34.131.222.819	175.119.289.578	-0,19
322	2014	WIIM	62.393.629.789	150.033.454.319	-0,42
323	2015	WIIM	41.390.838.940	177.962.941.779	-0,23
324	2016	WIIM	45.325.281.371	136.662.997.252	-0,33
325	2017	WIIM	31.638.662.019	54.491.308.212	-0,58
326	2018	WIIM	19.922.311.606	70.730.637.719	-0,28
327	2019	WIIM	14.976.706.662	42.874.167.628	-0,35
328	2020	WIIM	14.115.264.412	215.214.468.586	-0,07
329	2021	WIIM	59.915.239.649	214.884.126.122	-0,28
330	2022	WIIM	40.103.992.594	319.471.051.042	-0,13

2. **Product Market Competition Measurement Tabulation**

No.	Year	Code	Sales	Cost of Goods Sold	Sales, General, and Administrative	PCM	IPCM
1	2013	ALDO	399.345.658.763	316.437.023.218	38.950.017.003	0,110	-0,03
2	2014	ALDO	493.881.857.454	407.378.720.657	49.620.641.137	0,075	-0,05
3	2015	ALDO	538.363.112.800	435.203.997.016	55.240.892.094	0,089	-0,03
4	2016	ALDO	666.434.061.412	554.275.328.517	69.230.159.739	0,064	-0,05
5	2017	ALDO	708.740.551.637	588.935.699.382	70.120.926.011	0,070	-0,01
6	2018	ALDO	1.178.378.628.125	917.114.487.650	108.661.053.458	0,130	0,05
7	2019	ALDO	1.096.435.817.888	821.595.543.791	134.770.148.327	0,128	0,04
8	2020	ALDO	1.105.920.883.249	870.991.419.206	141.157.987.955	0,085	-0,01
9	2021	ALDO	1.457.266.932.664	1.163.053.476.830	155.359.235.042	0,095	0,00
10	2022	ALDO	1.401.914.243.306	1.146.503.479.600	154.150.443.564	0,072	-0,01
11	2013	ARNA	1.417.640.229.330	915.440.031.237	157.838.270.140	0,243	0,07
12	2014	ARNA	1.609.758.677.687	1.087.606.057.608	174.544.049.816	0,216	0,06
13	2015	ARNA	1.291.926.384.471	1.003.838.058.164	178.519.863.275	0,085	0,00
14	2016	ARNA	1.511.978.367.218	1.182.892.442.278	194.722.219.525	0,089	0,00
15	2017	ARNA	1.732.985.361.870	1.328.188.268.126	221.594.814.657	0,106	0,00
16	2018	ARNA	1.971.478.070.171	1.499.579.696.351	253.170.785.231	0,111	0,00
17	2019	ARNA	2.151.801.131.686	1.583.142.041.266	286.077.587.058	0,131	0,01
18	2020	ARNA	2.211.743.593.136	1.508.736.424.351	287.043.828.800	0,188	0,06
19	2021	ARNA	2.554.880.982.584	1.635.752.529.350	322.888.181.534	0,233	0,06
20	2022	ARNA	2.586.665.297.217	1.533.948.666.738	310.406.060.942	0,287	0,07
21	2013	ASII	193.880.000.000.000	158.569.000.000.000	16.708.000.000.000	0,096	-0,07
22	2014	ASII	201.701.000.000.000	162.892.000.000.000	18.646.000.000.000	0,100	-0,06
23	2015	ASII	184.196.000.000.000	147.486.000.000.000	19.498.000.000.000	0,093	0,00
24	2016	ASII	181.084.000.000.000	144.652.000.000.000	18.898.000.000.000	0,097	0,00
25	2017	ASII	206.057.000.000.000	163.689.000.000.000	22.042.000.000.000	0,099	0,00
26	2018	ASII	239.205.000.000.000	188.436.000.000.000	23.901.000.000.000	0,112	0,00
27	2019	ASII	237.166.000.000.000	186.927.000.000.000	24.055.000.000.000	0,110	-0,01
28	2020	ASII	175.046.000.000.000	136.268.000.000.000	25.688.000.000.000	0,075	-0,06
29	2021	ASII	233.485.000.000.000	182.452.000.000.000	25.500.000.000.000	0,109	-0,06
30	2022	ASII	301.379.000.000.000	231.291.000.000.000	27.887.000.000.000	0,140	-0,07
31	2013	AUTO	10.701.988.000.000	9.047.817.000.000	1.040.621.000.000	0,057	-0,05
32	2014	AUTO	12.255.427.000.000	10.500.112.000.000	1.290.024.000.000	0,038	-0,07
33	2015	AUTO	11.723.787.000.000	9.993.047.000.000	1.354.658.000.000	0,032	-0,07
34	2016	AUTO	12.806.867.000.000	10.954.051.000.000	1.405.476.000.000	0,035	-0,07
35	2017	AUTO	13.549.857.000.000	11.793.778.000.000	1.409.628.000.000	0,026	-0,06
36	2018	AUTO	15.356.381.000.000	13.483.532.000.000	1.508.826.000.000	0,024	-0,07

No.	Year	Code	Sales	Cost of Goods Sold	Sales, General, and Administrative	PCM	IPCM
37	2019	AUTO	15.444.775.000.000	13.256.531.000.000	1.642.451.000.000	0,035	-0,06
38	2020	AUTO	11.869.221.000.000	10.289.115.000.000	1.446.382.000.000	0,011	-0,07
39	2021	AUTO	15.151.663.000.000	13.290.925.000.000	1.711.577.000.000	0,010	-0,08
40	2022	AUTO	18.579.927.000.000	15.890.584.000.000	1.746.023.000.000	0,051	-0,07
41	2013	CPIN	25.662.992.000.000	20.513.184.000.000	1.245.875.000.000	0,152	-0,01
42	2014	CPIN	29.150.275.000.000	25.016.020.000.000	1.507.397.000.000	0,090	-0,06
43	2015	CPIN	29.920.628.000.000	24.817.185.000.000	1.757.201.000.000	0,112	-0,04
44	2016	CPIN	38.256.857.000.000	31.743.222.000.000	2.054.928.000.000	0,117	-0,05
45	2017	CPIN	49.367.386.000.000	43.118.451.000.000	2.596.750.000.000	0,074	-0,09
46	2018	CPIN	53.957.604.000.000	44.822.755.000.000	2.740.615.000.000	0,119	-0,04
47	2019	CPIN	42.501.146.000.000	34.525.979.000.000	2.809.239.000.000	0,122	-0,05
48	2020	CPIN	42.518.782.000.000	34.263.799.000.000	2.883.445.000.000	0,126	-0,02
49	2021	CPIN	51.698.249.000.000	43.559.424.000.000	3.528.500.000.000	0,089	-0,07
50	2022	CPIN	56.867.544.000.000	48.723.504.000.000	3.958.195.000.000	0,074	-0,06
51	2013	DLTA	867.066.542.000	261.802.094.000	268.859.569.000	0,388	0,22
52	2014	DLTA	879.253.383.000	261.747.135.000	259.852.167.000	0,407	0,26
53	2015	DLTA	699.506.819.000	234.232.348.000	239.016.572.000	0,323	0,17
54	2016	DLTA	768.455.378.000	234.745.152.000	246.863.906.000	0,373	0,21
55	2017	DLTA	777.308.328.000	203.036.967.000	242.666.945.000	0,427	0,27
56	2018	DLTA	893.006.350.000	241.721.111.000	254.692.973.000	0,444	0,28
57	2019	DLTA	827.136.727.000	230.440.697.000	234.847.981.000	0,437	0,26
58	2020	DLTA	546.336.411.000	179.156.903.000	235.143.082.000	0,242	0,10
59	2021	DLTA	681.205.785.000	204.614.850.000	250.966.445.000	0,331	0,18
60	2022	DLTA	778.744.315.000	235.763.528.000	273.208.755.000	0,346	0,21
61	2013	DVLA	1.101.684.170.000	441.028.093.000	513.220.432.000	0,134	0,01
62	2014	DVLA	1.103.821.775.000	518.192.211.000	487.534.720.000	0,089	-0,02
63	2015	DVLA	1.306.098.136.000	628.364.919.000	559.396.688.000	0,091	-0,01
64	2016	DVLA	1.451.356.680.000	649.918.928.000	598.485.528.000	0,140	0,02
65	2017	DVLA	1.575.647.308.000	681.690.889.000	683.714.243.000	0,133	0,04
66	2018	DVLA	1.699.657.296.000	774.247.594.000	677.460.788.000	0,146	0,05
67	2019	DVLA	1.813.020.278.000	839.538.301.000	680.053.858.000	0,162	0,06
68	2020	DVLA	1.829.699.557.000	897.710.889.000	727.978.554.000	0,111	0,00
69	2021	DVLA	1.900.893.602.000	905.125.390.000	806.070.934.000	0,100	-0,01
70	2022	DVLA	1.917.041.442.000	910.918.060.000	830.427.194.000	0,092	0,01
71	2013	GGRM	55.436.954.000.000	44.563.096.000.000	4.224.052.000.000	0,120	-0,04
72	2014	GGRM	65.185.850.000.000	51.806.284.000.000	4.805.845.000.000	0,132	-0,02
73	2015	GGRM	70.365.573.000.000	54.879.962.000.000	5.579.370.000.000	0,141	-0,01

No.	Year	Code	Sales	Cost of Goods Sold	Sales, General, and Administrative	PCM	IPCM
74	2016	GGRM	76.274.147.000.000	59.657.431.000.000	6.644.400.000.000	0,131	-0,04
75	2017	GGRM	83.305.925.000.000	65.084.263.000.000	7.103.026.000.000	0,133	-0,03
76	2018	GGRM	95.707.663.000.000	77.063.336.000.000	7.551.057.000.000	0,116	-0,05
77	2019	GGRM	110.523.819.000.000	87.740.564.000.000	7.993.256.000.000	0,134	-0,04
78	2020	GGRM	114.477.311.000.000	97.089.067.000.000	7.581.497.000.000	0,086	-0,06
79	2021	GGRM	124.881.266.000.000	110.608.655.000.000	7.159.938.000.000	0,057	-0,10
80	2022	GGRM	124.682.692.000.000	113.587.089.000.000	7.324.975.000.000	0,030	-0,11
81	2013	HMSP	75.025.207.000.000	54.953.870.000.000	5.471.081.000.000	0,195	0,03
82	2014	HMSP	80.690.139.000.000	60.190.077.000.000	6.694.643.000.000	0,171	0,02
83	2015	HMSP	89.069.306.000.000	67.304.917.000.000	7.716.318.000.000	0,158	0,00
84	2016	HMSP	95.466.657.000.000	71.611.981.000.000	7.834.324.000.000	0,168	0,00
85	2017	HMSP	99.091.484.000.000	74.875.642.000.000	8.104.497.000.000	0,163	0,00
86	2018	HMSP	106.741.891.000.000	81.251.100.000.000	8.608.863.000.000	0,158	0,00
87	2019	HMSP	106.055.176.000.000	79.932.195.000.000	9.045.894.000.000	0,161	-0,01
88	2020	HMSP	92.425.210.000.000	73.653.975.000.000	8.369.079.000.000	0,113	-0,03
89	2021	HMSP	98.874.784.000.000	82.061.437.000.000	8.447.624.000.000	0,085	-0,07
90	2022	HMSP	111.211.321.000.000	94.053.123.000.000	9.405.015.000.000	0,070	-0,07
91	2013	ICBP	25.094.681.000.000	18.668.990.000.000	3.691.319.000.000	0,109	-0,05
92	2014	ICBP	30.022.463.000.000	21.922.158.000.000	4.980.714.000.000	0,104	-0,04
93	2015	ICBP	31.741.094.000.000	22.121.957.000.000	5.711.346.000.000	0,123	-0,03
94	2016	ICBP	34.375.236.000.000	23.606.755.000.000	5.832.326.000.000	0,144	-0,02
95	2017	ICBP	35.606.593.000.000	24.547.757.000.000	5.681.180.000.000	0,151	-0,01
96	2018	ICBP	38.413.407.000.000	26.147.857.000.000	6.493.793.000.000	0,150	-0,01
97	2019	ICBP	42.296.703.000.000	27.892.690.000.000	7.125.871.000.000	0,172	0,00
98	2020	ICBP	46.641.048.000.000	29.416.673.000.000	8.106.983.000.000	0,195	0,05
99	2021	ICBP	56.803.733.000.000	36.516.449.000.000	8.737.631.000.000	0,203	0,05
100	2022	ICBP	64.797.516.000.000	43.005.230.000.000	9.378.241.000.000	0,192	0,05
101	2013	IGAR	643.403.327.263	552.651.666.850	29.896.391.434	0,095	-0,05
102	2014	IGAR	737.863.227.409	627.224.368.557	30.741.600.150	0,108	-0,02
103	2015	IGAR	677.331.846.043	576.095.243.965	33.687.405.098	0,100	-0,02
104	2016	IGAR	792.794.834.768	651.717.629.066	47.035.124.280	0,119	0,01
105	2017	IGAR	761.926.952.217	632.967.231.181	44.252.166.206	0,111	0,03
106	2018	IGAR	777.316.506.801	676.188.716.685	47.957.180.189	0,068	-0,01
107	2019	IGAR	776.541.441.414	652.946.761.824	51.179.105.856	0,093	0,00
108	2020	IGAR	739.402.296.030	610.537.250.674	51.800.964.648	0,104	0,00
109	2021	IGAR	970.111.806.482	791.413.142.457	55.008.779.972	0,128	0,04
110	2022	IGAR	1.083.672.730.660	906.529.152.332	54.649.490.491	0,113	0,03

No.	Year	Code	Sales	Cost of Goods Sold	Sales, General, and Administrative	PCM	IPCM
111	2013	INCI	81.244.267.131	63.381.341.326	11.585.284.139	0,077	-0,06
112	2014	INCI	110.023.088.698	86.309.154.555	17.477.089.891	0,057	-0,07
113	2015	INCI	136.668.408.270	103.276.421.100	22.479.239.188	0,080	-0,04
114	2016	INCI	176.067.561.639	133.771.586.731	27.097.794.763	0,086	-0,02
115	2017	INCI	269.706.737.385	209.449.833.745	37.740.280.930	0,083	0,00
116	2018	INCI	367.961.600.950	300.962.145.338	47.467.380.550	0,053	-0,03
117	2019	INCI	381.433.524.206	317.303.154.075	45.754.684.672	0,048	-0,04
118	2020	INCI	394.017.538.408	302.924.468.178	54.045.407.558	0,094	-0,01
119	2021	INCI	520.716.778.853	452.390.606.319	55.831.917.952	0,024	-0,07
120	2022	INCI	478.206.615.319	396.090.029.505	59.280.513.412	0,048	-0,03
121	2013	INDF	55.623.657.000.000	42.017.559.000.000	8.048.698.000.000	0,100	-0,06
122	2014	INDF	63.594.452.000.000	46.465.617.000.000	10.143.602.000.000	0,110	-0,04
123	2015	INDF	64.061.947.000.000	46.803.889.000.000	10.381.049.000.000	0,107	-0,05
124	2016	INDF	66.659.484.000.000	47.321.877.000.000	11.066.104.000.000	0,124	-0,04
125	2017	INDF	70.186.618.000.000	50.416.667.000.000	11.307.271.000.000	0,121	-0,04
126	2018	INDF	73.394.728.000.000	53.182.723.000.000	12.283.723.000.000	0,108	-0,05
127	2019	INDF	76.592.955.000.000	53.876.594.000.000	13.186.529.000.000	0,124	-0,05
128	2020	INDF	81.731.469.000.000	54.979.425.000.000	14.095.000.000.000	0,155	0,01
129	2021	INDF	99.345.618.000.000	66.871.514.000.000	15.341.585.000.000	0,172	0,02
130	2022	INDF	110.830.272.000.000	76.858.593.000.000	15.288.702.000.000	0,169	0,03
131	2013	INTP	18.691.286.000.000	10.036.632.000.000	2.679.697.000.000	0,320	0,18
132	2014	INTP	19.996.264.000.000	10.890.037.000.000	3.226.452.000.000	0,294	0,17
133	2015	INTP	17.798.055.000.000	9.888.919.000.000	2.879.720.000.000	0,283	0,16
134	2016	INTP	15.361.894.000.000	9.030.433.000.000	2.713.870.000.000	0,235	0,13
135	2017	INTP	14.431.211.000.000	9.423.490.000.000	3.080.203.000.000	0,134	0,05
136	2018	INTP	15.190.283.000.000	10.821.254.000.000	3.322.550.000.000	0,069	-0,01
137	2019	INTP	15.939.348.000.000	10.439.031.000.000	3.503.230.000.000	0,125	0,03
138	2020	INTP	14.184.322.000.000	9.070.770.000.000	3.153.515.000.000	0,138	0,04
139	2021	INTP	14.771.906.000.000	9.645.624.000.000	3.218.741.000.000	0,129	0,04
140	2022	INTP	16.328.278.000.000	11.185.120.000.000	3.334.297.000.000	0,111	0,03
141	2013	JPFA	21.412.085.000.000	17.794.240.000.000	1.815.209.000.000	0,084	-0,08
142	2014	JPFA	24.458.880.000.000	21.033.306.000.000	2.140.949.000.000	0,053	-0,09
143	2015	JPFA	25.022.913.000.000	21.029.912.000.000	2.265.058.000.000	0,069	-0,09
144	2016	JPFA	27.063.310.000.000	21.584.412.000.000	2.387.364.000.000	0,114	-0,05
145	2017	JPFA	29.602.688.000.000	24.585.704.000.000	2.861.997.000.000	0,073	-0,09
146	2018	JPFA	36.228.261.000.000	28.342.636.000.000	4.315.334.000.000	0,099	-0,06
147	2019	JPFA	38.872.084.000.000	31.000.234.000.000	4.736.108.000.000	0,081	-0,09

No.	Year	Code	Sales	Cost of Goods Sold	Sales, General, and Administrative	PCM	IPCM
148	2020	JPFA	36.964.948.000.000	29.535.739.000.000	4.794.180.000.000	0,071	-0,08
149	2021	JPFA	44.878.300.000.000	36.858.209.000.000	4.798.418.000.000	0,072	-0,08
150	2022	JPFA	48.972.085.000.000	41.288.929.000.000	4.880.287.000.000	0,057	-0,08
151	2013	KAEF	4.348.073.988.385	3.055.921.946.994	1.042.618.886.755	0,057	-0,07
152	2014	KAEF	4.521.024.379.759	3.135.542.319.600	1.099.831.412.528	0,063	-0,05
153	2015	KAEF	4.860.371.483.524	3.323.619.297.215	1.227.054.498.636	0,064	-0,04
154	2016	KAEF	5.811.502.656.431	3.947.606.932.563	1.479.784.404.405	0,066	-0,05
155	2017	KAEF	6.127.479.369.403	3.925.599.724.290	1.791.957.725.462	0,067	-0,03
156	2018	KAEF	8.459.247.287.000	5.096.044.699.000	2.596.191.418.000	0,091	-0,01
157	2019	KAEF	9.400.535.476.000	5.897.247.790.000	3.211.857.197.000	0,031	-0,08
158	2020	KAEF	10.006.173.023.000	6.349.041.832.000	3.326.011.792.000	0,033	-0,08
159	2021	KAEF	12.857.626.593.000	8.461.341.494.000	3.500.532.785.000	0,070	-0,04
160	2022	KAEF	9.606.145.359.000	6.013.310.323.000	3.286.258.916.000	0,032	-0,05
161	2013	KBLF	16.002.131.057.048	8.323.017.600.990	4.994.806.168.574	0,168	0,04
162	2014	KBLF	17.368.532.547.558	8.892.725.955.545	5.569.985.564.711	0,167	0,06
163	2015	KBLF	17.887.464.223.321	9.295.887.287.351	5.781.408.600.854	0,157	0,05
164	2016	KBLF	19.374.230.957.505	9.886.262.652.473	6.239.606.560.940	0,168	0,05
165	2017	KBLF	20.182.120.166.616	10.369.836.693.616	6.358.635.973.042	0,171	0,08
166	2018	KBLF	21.074.306.186.027	11.226.380.392.484	6.391.572.085.080	0,164	0,07
167	2019	KBLF	22.633.476.361.038	12.390.008.590.196	6.646.590.626.265	0,159	0,05
168	2020	KBLF	23.112.654.991.224	12.866.332.497.453	6.406.021.689.697	0,166	0,05
169	2021	KBLF	26.261.194.512.313	14.977.410.271.049	6.971.651.333.503	0,164	0,06
170	2022	KBLF	28.933.502.646.719	17.229.436.210.443	7.181.297.803.434	0,156	0,07
171	2013	KDSI	1.386.314.584.485	1.205.620.814.645	128.891.285.241	0,037	-0,10
172	2014	KDSI	1.626.232.662.544	1.394.909.156.732	144.333.190.281	0,053	-0,07
173	2015	KDSI	1.713.946.192.967	1.492.261.925.405	171.170.899.047	0,029	-0,09
174	2016	KDSI	1.995.337.146.834	1.721.942.515.692	170.271.393.660	0,052	-0,06
175	2017	KDSI	2.245.519.457.754	1.932.476.641.257	182.783.679.745	0,058	-0,02
176	2018	KDSI	2.327.951.625.610	1.994.235.755.807	196.712.995.412	0,059	-0,02
177	2019	KDSI	2.234.941.096.110	1.873.996.994.441	206.619.101.511	0,069	-0,02
178	2020	KDSI	1.923.089.935.410	1.595.347.718.273	213.728.694.625	0,059	-0,04
179	2021	KDSI	2.241.085.126.185	1.907.749.563.828	207.749.935.663	0,056	-0,04
180	2022	KDSI	2.352.412.014.545	2.028.565.438.727	195.559.210.812	0,055	-0,03
181	2013	MERK	805.746.000.000	358.283.983.000	255.290.874.000	0,239	0,11
182	2014	MERK	863.207.535.000	404.600.761.000	264.354.623.000	0,225	0,11
183	2015	MERK	983.446.471.000	487.190.159.000	311.514.437.000	0,188	0,08
184	2016	MERK	1.034.806.890.000	492.613.670.000	327.604.119.000	0,207	0,09

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185	2017	MERK	582.002.470.000	381.337.548.000	159.208.806.000	0,071	-0,02
186	2018	MERK	611.958.076.000	400.270.367.000	168.143.986.000	0,071	-0,03
187	2019	MERK	744.634.530.000	421.320.853.000	198.814.436.000	0,167	0,06
188	2020	MERK	655.847.125.000	361.641.158.000	185.489.235.000	0,166	0,05
189	2021	MERK	1.064.394.815.000	665.711.070.000	208.265.189.000	0,179	0,07
190	2022	MERK	1.124.599.738.000	697.007.762.000	190.287.812.000	0,211	0,13
191	2013	MLBI	3.561.989.000.000	1.278.385.000.000	730.498.000.000	0,436	0,27
192	2014	MLBI	2.988.501.000.000	1.182.579.000.000	655.934.000.000	0,385	0,24
193	2015	MLBI	2.696.318.000.000	1.073.366.000.000	682.652.000.000	0,349	0,19
194	2016	MLBI	3.263.311.000.000	1.115.567.000.000	775.212.000.000	0,421	0,25
195	2017	MLBI	3.389.736.000.000	1.118.032.000.000	700.595.000.000	0,463	0,30
196	2018	MLBI	3.574.801.000.000	1.364.750.000.000	537.109.000.000	0,468	0,31
197	2019	MLBI	3.711.405.000.000	1.426.351.000.000	575.781.000.000	0,461	0,29
198	2020	MLBI	1.985.009.000.000	1.044.783.000.000	449.834.000.000	0,247	0,10
199	2021	MLBI	2.473.681.000.000	1.111.984.000.000	488.998.000.000	0,353	0,20
200	2022	MLBI	3.114.907.000.000	1.191.216.000.000	659.402.000.000	0,406	0,27
201	2013	MYOR	12.017.837.133.337	9.096.171.291.553	1.616.856.544.095	0,109	-0,06
202	2014	MYOR	14.169.088.278.238	11.633.862.469.470	1.644.361.774.767	0,063	-0,08
203	2015	MYOR	14.818.730.635.847	10.620.394.515.840	2.335.715.287.020	0,126	-0,03
204	2016	MYOR	18.349.959.898.358	13.449.537.442.446	2.585.180.213.045	0,126	-0,04
205	2017	MYOR	20.816.673.946.473	15.841.619.191.077	2.514.495.367.346	0,118	-0,04
206	2018	MYOR	24.060.802.395.725	17.664.148.865.078	3.768.761.522.641	0,109	-0,05
207	2019	MYOR	25.026.739.472.547	17.109.498.526.032	4.744.976.395.481	0,127	-0,05
208	2020	MYOR	24.476.953.742.651	17.177.830.782.966	4.468.194.765.530	0,116	-0,03
209	2021	MYOR	30.669.405.967.404	20.981.574.813.780	5.150.667.594.248	0,148	-0,01
210	2022	MYOR	27.904.558.322.183	23.829.982.628.480	4.406.308.697.223	-0,012	-0,15
211	2013	PYFA	192.555.731.180	62.125.464.282	120.703.444.865	0,051	-0,07
212	2014	PYFA	222.302.407.528	80.959.311.191	133.963.689.427	0,033	-0,08
213	2015	PYFA	217.843.921.422	79.859.558.081	128.636.387.807	0,043	-0,06
214	2016	PYFA	216.951.583.953	81.635.830.400	125.093.414.588	0,047	-0,07
215	2017	PYFA	223.002.490.278	88.026.695.943	123.160.377.592	0,053	-0,04
216	2018	PYFA	250.445.853.364	99.342.305.409	137.965.394.976	0,052	-0,05
217	2019	PYFA	247.114.772.587	106.912.029.284	129.282.284.079	0,044	-0,06
218	2020	PYFA	277.398.061.739	113.507.729.371	134.339.588.864	0,107	-0,01
219	2021	PYFA	630.530.235.961	385.949.260.966	219.976.719.756	0,039	-0,07
220	2022	PYFA	715.425.027.099	464.580.400.643	286.433.306.197	-0,050	-0,13
221	2013	ROTI	1.505.519.937.691	806.917.558.963	488.675.578.783	0,139	-0,02

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222	2014	ROTI	1.880.262.901.697	978.841.438.517	638.726.421.997	0,140	-0,01
223	2015	ROTI	2.174.501.712.899	1.019.511.433.830	739.133.258.994	0,191	0,04
224	2016	ROTI	2.521.920.968.213	1.220.832.597.005	918.136.528.749	0,152	-0,01
225	2017	ROTI	2.491.100.179.560	1.183.169.352.508	1.106.974.224.495	0,081	-0,08
226	2018	ROTI	2.766.545.866.684	1.274.332.759.465	1.353.753.543.617	0,050	-0,11
227	2019	ROTI	3.337.022.314.624	1.487.586.425.468	1.556.060.704.391	0,088	-0,09
228	2020	ROTI	3.212.034.546.032	1.409.870.836.152	1.598.529.737.771	0,063	-0,08
229	2021	ROTI	3.287.623.237.457	1.500.216.194.750	1.430.295.444.291	0,109	-0,05
230	2022	ROTI	3.935.182.048.668	1.849.122.162.973	1.517.962.815.107	0,144	0,01
231	2013	SKLT	567.048.547.543	442.979.210.563	104.378.156.976	0,035	-0,13
232	2014	SKLT	681.419.524.161	526.791.514.853	127.557.221.091	0,040	-0,11
233	2015	SKLT	745.107.731.208	561.185.818.083	150.335.591.618	0,045	-0,11
234	2016	SKLT	833.850.372.883	619.332.040.650	180.911.622.012	0,040	-0,13
235	2017	SKLT	914.188.759.779	677.184.873.211	195.710.157.351	0,045	-0,12
236	2018	SKLT	1.045.029.834.378	777.714.919.223	213.149.072.464	0,052	-0,11
237	2019	SKLT	1.281.116.255.236	957.200.088.005	242.676.545.796	0,063	-0,11
238	2020	SKLT	1.253.700.810.596	920.111.473.686	258.845.382.398	0,060	-0,09
239	2021	SKLT	1.356.846.112.540	979.016.594.096	279.554.851.876	0,072	-0,08
240	2022	SKLT	1.539.310.803.104	1.131.872.232.462	319.276.295.824	0,057	-0,08
241	2013	SMGR	24.501.240.780.000	13.557.146.834.000	3.971.709.135.000	0,285	0,14
242	2014	SMGR	26.987.035.135.000	15.408.157.860.000	4.631.759.381.000	0,257	0,13
243	2015	SMGR	26.948.004.471.000	16.302.008.098.000	4.746.622.136.000	0,219	0,10
244	2016	SMGR	26.134.306.138.000	16.278.433.690.000	4.882.457.899.000	0,190	0,08
245	2017	SMGR	27.813.664.176.000	19.854.065.409.000	5.326.360.110.000	0,095	0,01
246	2018	SMGR	30.687.626.000.000	21.357.096.000.000	4.557.265.000.000	0,156	0,07
247	2019	SMGR	40.368.107.000.000	27.654.124.000.000	6.620.904.000.000	0,151	0,06
248	2020	SMGR	35.171.668.000.000	23.347.636.000.000	6.171.378.000.000	0,161	0,06
249	2021	SMGR	36.702.301.000.000	24.975.639.000.000	6.490.513.000.000	0,143	0,05
250	2022	SMGR	36.378.597.000.000	25.700.993.000.000	6.108.458.000.000	0,126	0,04
251	2013	SMSM	2.381.889.000.000	1.737.847.000.000	220.331.000.000	0,178	0,07
252	2014	SMSM	2.632.860.000.000	1.847.700.000.000	236.213.000.000	0,208	0,10
253	2015	SMSM	2.802.924.000.000	1.933.387.000.000	288.833.000.000	0,207	0,10
254	2016	SMSM	2.879.876.000.000	1.945.735.000.000	305.134.000.000	0,218	0,12
255	2017	SMSM	3.339.964.000.000	2.333.049.000.000	331.292.000.000	0,202	0,11
256	2018	SMSM	3.933.353.000.000	2.740.108.000.000	374.861.000.000	0,208	0,11
257	2019	SMSM	3.935.811.000.000	2.744.171.000.000	399.526.000.000	0,201	0,10
258	2020	SMSM	3.233.693.000.000	2.196.408.000.000	358.771.000.000	0,210	0,13

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259	2021	SMSM	4.162.931.000.000	2.825.555.000.000	431.584.000.000	0,218	0,13
260	2022	SMSM	4.894.164.000.000	3.289.251.000.000	482.538.000.000	0,229	0,11
261	2013	STTP	1.694.935.468.814	1.384.916.764.438	126.167.221.308	0,108	-0,06
262	2014	STTP	2.170.464.194.350	1.763.078.470.328	183.828.516.208	0,103	-0,04
263	2015	STTP	2.544.277.844.656	2.012.271.097.866	235.797.833.764	0,116	-0,04
264	2016	STTP	2.629.107.367.897	2.079.869.989.276	267.085.558.993	0,107	-0,06
265	2017	STTP	2.825.409.180.889	2.211.949.522.001	287.928.830.651	0,115	-0,05
266	2018	STTP	2.826.957.323.397	2.207.268.926.068	281.529.057.223	0,120	-0,04
267	2019	STTP	3.512.509.168.853	2.559.476.265.555	333.799.858.739	0,176	0,00
268	2020	STTP	3.846.300.254.825	2.776.101.376.253	321.571.925.128	0,195	0,05
269	2021	STTP	4.241.856.914.012	3.209.530.695.002	403.583.152.161	0,148	-0,01
270	2022	STTP	4.931.553.771.470	3.901.792.259.235	447.630.772.003	0,118	-0,02
271	2013	TRIS	709.945.585.382	522.304.474.035	124.103.465.128	0,089	-0,02
272	2014	TRIS	746.828.922.732	557.964.669.059	135.342.890.051	0,072	-0,03
273	2015	TRIS	859.743.472.895	627.767.344.886	163.582.074.471	0,080	-0,03
274	2016	TRIS	901.909.489.240	686.698.421.105	168.380.935.806	0,052	-0,05
275	2017	TRIS	773.806.956.330	592.289.133.221	148.109.202.029	0,043	-0,05
276	2018	TRIS	1.396.784.128.139	1.056.258.579.778	253.442.248.813	0,062	-0,04
277	2019	TRIS	1.478.735.205.373	1.130.071.667.248	256.074.105.321	0,063	-0,04
278	2020	TRIS	1.141.269.765.789	908.604.417.353	198.511.633.789	0,030	-0,05
279	2021	TRIS	1.098.352.842.355	871.202.519.599	182.798.442.149	0,040	-0,05
280	2022	TRIS	1.498.011.822.265	1.161.335.020.516	228.963.874.888	0,072	-0,05
281	2013	TRST	2.033.149.367.039	1.797.095.357.917	116.609.916.943	0,059	-0,08
282	2014	TRST	2.507.884.797.367	2.292.151.843.251	139.610.696.221	0,030	-0,09
283	2015	TRST	2.457.349.444.991	2.245.445.182.911	143.697.142.513	0,028	-0,09
284	2016	TRST	2.249.418.846.803	2.052.139.045.365	142.529.250.306	0,024	-0,09
285	2017	TRST	2.354.938.016.436	2.159.382.022.383	143.529.398.921	0,022	-0,06
286	2018	TRST	2.630.918.557.954	2.410.651.375.897	142.503.585.271	0,030	-0,05
287	2019	TRST	2.566.094.747.992	2.358.430.472.066	153.087.200.248	0,021	-0,07
288	2020	TRST	2.991.912.117.541	2.644.989.179.914	176.942.283.169	0,057	-0,04
289	2021	TRST	3.652.442.192.823	3.164.714.349.819	241.827.683.550	0,067	-0,02
290	2022	TRST	3.819.385.000.000	3.372.937.000.000	250.661.000.000	0,051	-0,03
291	2013	TSPC	6.854.889.233.121	4.135.086.565.009	2.071.818.109.626	0,095	-0,03
292	2014	TSPC	7.512.115.037.587	4.572.218.401.004	2.308.057.741.685	0,084	-0,03
293	2015	TSPC	8.181.481.867.179	5.063.909.651.665	2.463.940.774.129	0,080	-0,02
294	2016	TSPC	9.138.238.993.842	5.653.874.822.666	2.839.514.655.648	0,071	-0,05
295	2017	TSPC	9.565.462.045.199	5.907.286.902.999	3.035.729.985.790	0,065	-0,03

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296	2018	TSPC	10.088.118.830.780	6.246.536.620.082	3.196.721.770.729	0,064	-0,03
297	2019	TSPC	10.993.842.057.747	6.752.312.739.035	3.410.331.103.580	0,076	-0,03
298	2020	TSPC	10.968.402.090.246	7.055.613.010.741	2.798.938.147.140	0,102	-0,01
299	2021	TSPC	11.234.443.003.639	7.226.149.613.742	2.921.770.858.561	0,097	-0,01
300	2022	TSPC	12.254.369.318.120	8.089.807.850.164	3.486.677.755.629	0,055	-0,03
301	2013	ULTJ	3.460.231.249.075	2.446.448.128.599	551.154.993.237	0,134	-0,03
302	2014	ULTJ	3.916.789.366.423	2.979.799.459.658	610.075.669.589	0,083	-0,06
303	2015	ULTJ	4.393.932.684.171	3.011.443.561.889	729.850.577.125	0,149	-0,01
304	2016	ULTJ	4.685.987.917.355	3.052.883.009.122	771.136.778.406	0,184	0,02
305	2017	ULTJ	4.879.559.000.000	3.043.936.000.000	861.851.000.000	0,200	0,04
306	2018	ULTJ	5.472.882.000.000	3.516.606.000.000	1.052.258.000.000	0,165	0,00
307	2019	ULTJ	6.223.057.000.000	3.881.051.000.000	1.093.398.000.000	0,201	0,03
308	2020	ULTJ	5.967.362.000.000	3.738.835.000.000	1.004.934.000.000	0,205	0,06
309	2021	ULTJ	6.616.642.000.000	4.241.696.000.000	958.711.000.000	0,214	0,06
310	2022	ULTJ	7.656.252.000.000	5.199.164.000.000	1.185.591.000.000	0,166	0,03
311	2013	UNVR	30.757.435.000.000	14.978.947.000.000	8.656.745.000.000	0,232	0,07
312	2014	UNVR	34.511.534.000.000	17.304.613.000.000	9.176.684.000.000	0,233	0,09
313	2015	UNVR	36.484.030.000.000	17.835.061.000.000	10.705.089.000.000	0,218	0,06
314	2016	UNVR	40.053.732.000.000	19.594.636.000.000	11.752.386.000.000	0,217	0,05
315	2017	UNVR	41.204.510.000.000	19.984.776.000.000	11.714.758.000.000	0,231	0,07
316	2018	UNVR	41.802.073.000.000	20.697.246.000.000	11.603.232.000.000	0,227	0,07
317	2019	UNVR	42.922.563.000.000	20.893.870.000.000	11.910.869.000.000	0,236	0,06
318	2020	UNVR	42.972.474.000.000	20.515.484.000.000	12.985.856.000.000	0,220	0,07
319	2021	UNVR	39.545.959.000.000	19.919.572.000.000	11.948.464.000.000	0,194	0,04
320	2022	UNVR	41.218.881.000.000	22.153.944.000.000	11.995.156.000.000	0,172	0,03
321	2013	WIIM	1.588.022.200.150	1.118.437.306.390	289.383.729.382	0,113	-0,05
322	2014	WIIM	1.661.533.200.316	1.177.718.564.881	321.035.107.056	0,098	-0,05
323	2015	WIIM	1.839.419.574.956	1.279.427.333.869	359.272.029.421	0,109	-0,05
324	2016	WIIM	1.685.795.530.617	1.176.493.799.658	374.918.039.897	0,080	-0,09
325	2017	WIIM	1.476.427.090.781	1.043.634.733.778	388.619.814.013	0,030	-0,13
326	2018	WIIM	1.405.384.153.405	963.851.587.401	389.346.287.885	0,037	-0,12
327	2019	WIIM	1.393.574.099.760	962.040.733.573	402.885.126.126	0,021	-0,15
328	2020	WIIM	1.994.066.771.177	1.368.626.457.514	420.569.492.780	0,103	-0,04
329	2021	WIIM	2.733.691.702.981	2.082.163.021.095	450.154.981.229	0,074	-0,08
330	2022	WIIM	3.704.350.294.106	2.915.527.324.652	482.941.331.895	0,083	-0,06

3. **Business Strategy Measurement Tabulation**

No.	Year	Code	EMP Score	Mtob Score	Market Score	PPEINT Score	Total Score	Type of Strategy	Dummy Code
1	2013	ALDO	5	4	5	4	18	Prospector	1
2	2014	ALDO	5	4	5	5	19	Prospector	1
3	2015	ALDO	5	4	5	4	18	Prospector	1
4	2016	ALDO	5	4	5	5	19	Prospector	1
5	2017	ALDO	5	4	4	4	17	Prospector	1
6	2018	ALDO	4	4	3	4	15	Prospector	1
7	2019	ALDO	3	4	1	5	13	Prospector	1
8	2020	ALDO	1	4	3	4	12	Defender	0
9	2021	ALDO	1	5	5	3	14	Prospector	1
10	2022	ALDO	1	5	2	3	11	Defender	0
11	2013	ARNA	5	5	1	1	12	Defender	0
12	2014	ARNA	5	5	1	1	12	Defender	0
13	2015	ARNA	5	5	1	1	12	Defender	0
14	2016	ARNA	5	5	1	1	12	Defender	0
15	2017	ARNA	5	5	1	1	12	Defender	0
16	2018	ARNA	5	5	1	1	12	Defender	0
17	2019	ARNA	5	5	1	1	12	Defender	0
18	2020	ARNA	1	5	1	1	8	Defender	0
19	2021	ARNA	1	5	1	1	8	Defender	0
20	2022	ARNA	5	5	1	1	12	Defender	0
21	2013	ASII	1	1	5	5	12	Defender	0
22	2014	ASII	1	1	5	5	12	Defender	0
23	2015	ASII	1	1	5	5	12	Defender	0
24	2016	ASII	1	1	5	5	12	Defender	0
25	2017	ASII	1	1	5	5	12	Defender	0
26	2018	ASII	1	1	5	5	12	Defender	0
27	2019	ASII	1	1	5	5	12	Defender	0
28	2020	ASII	5	1	5	5	16	Prospector	1
29	2021	ASII	5	1	5	5	16	Prospector	1
30	2022	ASII	1	1	5	5	12	Defender	0
31	2013	AUTO	3	3	5	3	14	Prospector	1
32	2014	AUTO	3	3	5	5	16	Prospector	1
33	2015	AUTO	3	1	5	3	12	Defender	0
34	2016	AUTO	3	1	5	3	12	Defender	0
35	2017	AUTO	3	3	5	5	16	Prospector	1
36	2018	AUTO	3	3	5	5	16	Prospector	1

No.	Year	Code	EMP Score	Mtob Score	Market Score	PPEINT Score	Total Score	Type of Strategy	Dummy Code
37	2019	AUTO	3	1	5	5	14	Prospector	1
38	2020	AUTO	3	1	5	3	12	Defender	0
39	2021	AUTO	3	1	5	3	12	Defender	0
40	2022	AUTO	3	1	5	5	14	Prospector	1
41	2013	CPIN	1	3	1	2	7	Defender	0
42	2014	CPIN	1	4	1	2	8	Defender	0
43	2015	CPIN	1	2	1	2	6	Defender	0
44	2016	CPIN	1	3	1	2	7	Defender	0
45	2017	CPIN	1	2	1	2	6	Defender	0
46	2018	CPIN	1	4	1	2	8	Defender	0
47	2019	CPIN	1	4	1	2	8	Defender	0
48	2020	CPIN	2	4	1	2	9	Defender	0
49	2021	CPIN	2	4	1	2	9	Defender	0
50	2022	CPIN	2	4	1	1	8	Defender	0
51	2013	DLTA	2	4	4	5	15	Prospector	1
52	2014	DLTA	2	4	4	5	15	Prospector	1
53	2015	DLTA	3	4	4	5	16	Prospector	1
54	2016	DLTA	3	3	3	5	14	Prospector	1
55	2017	DLTA	3	3	4	5	15	Prospector	1
56	2018	DLTA	3	3	3	5	14	Prospector	1
57	2019	DLTA	3	3	4	5	15	Prospector	1
58	2020	DLTA	3	3	5	5	16	Prospector	1
59	2021	DLTA	3	3	5	5	16	Prospector	1
60	2022	DLTA	3	4	4	5	16	Prospector	1
61	2013	DVLA	1	2	4	4	11	Defender	0
62	2014	DVLA	3	1	4	4	12	Defender	0
63	2015	DVLA	3	1	4	5	13	Prospector	1
64	2016	DVLA	3	1	4	4	12	Defender	0
65	2017	DVLA	2	2	3	5	12	Defender	0
66	2018	DVLA	3	2	3	5	13	Prospector	1
67	2019	DVLA	3	3	3	5	14	Prospector	1
68	2020	DVLA	3	1	4	5	13	Prospector	1
69	2021	DVLA	3	2	5	5	15	Prospector	1
70	2022	DVLA	3	3	4	5	15	Prospector	1
71	2013	GGRM	3	2	2	4	11	Defender	0
72	2014	GGRM	3	2	2	4	11	Defender	0
73	2015	GGRM	3	2	2	4	11	Defender	0
74	2016	GGRM	2	2	2	3	9	Defender	0

No.	Year	Code	EMP Score	Mtob Score	Market Score	PPEINT Score	Total Score	Type of Strategy	Dummy Code
75	2017	GGRM	2	3	2	3	10	Defender	0
76	2018	GGRM	2	3	2	3	10	Defender	0
77	2019	GGRM	2	2	2	3	9	Defender	0
78	2020	GGRM	2	1	2	3	8	Defender	0
79	2021	GGRM	2	1	1	3	7	Defender	0
80	2022	GGRM	2	1	1	3	7	Defender	0
81	2013	HMSP	2	5	2	5	14	Prospector	1
82	2014	HMSP	2	5	2	5	14	Prospector	1
83	2015	HMSP	2	5	3	5	15	Prospector	1
84	2016	HMSP	2	5	2	5	14	Prospector	1
85	2017	HMSP	2	5	2	5	14	Prospector	1
86	2018	HMSP	2	5	2	5	14	Prospector	1
87	2019	HMSP	2	5	2	5	14	Prospector	1
88	2020	HMSP	2	5	2	5	14	Prospector	1
89	2021	HMSP	2	4	2	5	13	Prospector	1
90	2022	HMSP	2	4	2	5	13	Prospector	1
91	2013	ICBP	4	3	3	4	14	Prospector	1
92	2014	ICBP	4	3	3	5	15	Prospector	1
93	2015	ICBP	4	3	3	5	15	Prospector	1
94	2016	ICBP	4	4	3	4	15	Prospector	1
95	2017	ICBP	4	4	3	4	15	Prospector	1
96	2018	ICBP	4	4	3	4	15	Prospector	1
97	2019	ICBP	4	4	3	4	15	Prospector	1
98	2020	ICBP	4	2	3	5	14	Prospector	1
99	2021	ICBP	4	2	3	5	14	Prospector	1
100	2022	ICBP	3	2	3	4	12	Defender	0
101	2013	IGAR	3	3	2	5	13	Prospector	1
102	2014	IGAR	4	3	1	5	13	Prospector	1
103	2015	IGAR	4	3	3	5	15	Prospector	1
104	2016	IGAR	3	3	1	5	12	Defender	0
105	2017	IGAR	4	3	1	5	13	Prospector	1
106	2018	IGAR	5	3	4	5	17	Prospector	1
107	2019	IGAR	5	2	2	5	14	Prospector	1
108	2020	IGAR	5	3	1	5	14	Prospector	1
109	2021	IGAR	5	1	1	5	12	Defender	0
110	2022	IGAR	5	1	1	5	12	Defender	0
111	2013	INCI	4	1	1	5	11	Defender	0
112	2014	INCI	3	1	2	4	10	Defender	0

No.	Year	Code	EMP Score	Mtob Score	Market Score	PPEINT Score	Total Score	Type of Strategy	Dummy Code
113	2015	INCI	3	2	1	5	11	Defender	0
114	2016	INCI	4	1	2	3	10	Defender	0
115	2017	INCI	2	1	1	3	7	Defender	0
116	2018	INCI	3	1	1	3	8	Defender	0
117	2019	INCI	4	1	3	4	12	Defender	0
118	2020	INCI	4	1	1	5	11	Defender	0
119	2021	INCI	4	1	1	5	11	Defender	0
120	2022	INCI	4	1	1	5	11	Defender	0
121	2013	INDF	4	1	2	4	11	Defender	0
122	2014	INDF	4	1	2	4	11	Defender	0
123	2015	INDF	4	1	1	4	10	Defender	0
124	2016	INDF	4	1	1	3	9	Defender	0
125	2017	INDF	4	1	1	2	8	Defender	0
126	2018	INDF	4	1	1	2	8	Defender	0
127	2019	INDF	4	1	2	2	9	Defender	0
128	2020	INDF	4	1	2	4	11	Defender	0
129	2021	INDF	4	1	2	4	11	Defender	0
130	2022	INDF	4	1	2	4	11	Defender	0
131	2013	INTP	1	5	3	3	12	Defender	0
132	2014	INTP	1	5	4	2	12	Defender	0
133	2015	INTP	1	5	2	2	10	Defender	0
134	2016	INTP	1	5	4	2	12	Defender	0
135	2017	INTP	1	5	5	2	13	Prospector	1
136	2018	INTP	1	5	5	2	13	Prospector	1
137	2019	INTP	1	5	5	2	13	Prospector	1
138	2020	INTP	3	5	5	2	15	Prospector	1
139	2021	INTP	2	5	3	2	12	Defender	0
140	2022	INTP	1	5	4	2	12	Defender	0
141	2013	JPFA	3	2	1	3	9	Defender	0
142	2014	JPFA	4	2	1	2	9	Defender	0
143	2015	JPFA	4	1	1	2	8	Defender	0
144	2016	JPFA	3	2	1	3	9	Defender	0
145	2017	JPFA	4	1	1	3	9	Defender	0
146	2018	JPFA	3	1	1	3	8	Defender	0
147	2019	JPFA	4	1	1	3	9	Defender	0
148	2020	JPFA	4	2	1	3	10	Defender	0
149	2021	JPFA	4	2	1	2	9	Defender	0
150	2022	JPFA	4	2	1	2	9	Defender	0

No.	Year	Code	EMP Score	Mtob Score	Market Score	PPEINT Score	Total Score	Type of Strategy	Dummy Code
151	2013	KAEF	4	1	1	5	11	Defender	0
152	2014	KAEF	4	3	1	5	13	Prospector	1
153	2015	KAEF	4	3	1	4	12	Defender	0
154	2016	KAEF	4	4	1	5	14	Prospector	1
155	2017	KAEF	4	3	1	3	11	Defender	0
156	2018	KAEF	4	3	1	3	11	Defender	0
157	2019	KAEF	4	1	1	1	7	Defender	0
158	2020	KAEF	4	4	1	1	10	Defender	0
159	2021	KAEF	4	1	1	1	7	Defender	0
160	2022	KAEF	4	1	1	2	8	Defender	0
161	2013	KBLF	3	4	1	2	10	Defender	0
162	2014	KBLF	2	5	1	3	11	Defender	0
163	2015	KBLF	2	4	1	2	9	Defender	0
164	2016	KBLF	2	3	1	2	8	Defender	0
165	2017	KBLF	1	4	2	2	9	Defender	0
166	2018	KBLF	1	5	2	2	10	Defender	0
167	2019	KBLF	2	5	2	3	12	Defender	0
168	2020	KBLF	2	5	2	3	12	Defender	0
169	2021	KBLF	2	5	2	3	12	Defender	0
170	2022	KBLF	2	5	2	3	12	Defender	0
171	2013	KDSI	5	2	4	2	13	Prospector	1
172	2014	KDSI	5	1	3	3	12	Defender	0
173	2015	KDSI	5	1	4	3	13	Prospector	1
174	2016	KDSI	5	2	3	4	14	Prospector	1
175	2017	KDSI	5	1	2	5	13	Prospector	1
176	2018	KDSI	5	2	2	5	14	Prospector	1
177	2019	KDSI	5	3	1	3	12	Defender	0
178	2020	KDSI	5	2	2	3	12	Defender	0
179	2021	KDSI	5	2	2	4	13	Prospector	1
180	2022	KDSI	5	2	3	4	14	Prospector	1
181	2013	MERK	2	5	2	5	14	Prospector	1
182	2014	MERK	1	4	2	5	12	Defender	0
183	2015	MERK	1	5	2	5	13	Prospector	1
184	2016	MERK	1	5	2	5	13	Prospector	1
185	2017	MERK	3	5	1	5	14	Prospector	1
186	2018	MERK	2	4	1	5	12	Defender	0
187	2019	MERK	1	4	1	5	11	Defender	0
188	2020	MERK	1	2	1	5	9	Defender	0

No.	Year	Code	EMP Score	Mtob Score	Market Score	PPEINT Score	Total Score	Type of Strategy	Dummy Code
189	2021	MERK	1	3	1	5	10	Defender	0
190	2022	MERK	1	4	1	5	11	Defender	0
191	2013	MLBI	1	5	5	1	12	Defender	0
192	2014	MLBI	1	5	5	1	12	Defender	0
193	2015	MLBI	1	5	5	1	12	Defender	0
194	2016	MLBI	1	5	5	1	12	Defender	0
195	2017	MLBI	1	5	5	1	12	Defender	0
196	2018	MLBI	1	5	4	1	11	Defender	0
197	2019	MLBI	1	5	4	1	11	Defender	0
198	2020	MLBI	1	5	4	1	11	Defender	0
199	2021	MLBI	1	5	4	1	11	Defender	0
200	2022	MLBI	1	5	5	2	13	Prospector	1
201	2013	MYOR	4	3	5	3	15	Prospector	1
202	2014	MYOR	3	2	5	3	13	Prospector	1
203	2015	MYOR	3	4	5	3	15	Prospector	1
204	2016	MYOR	3	4	5	4	16	Prospector	1
205	2017	MYOR	3	4	5	4	16	Prospector	1
206	2018	MYOR	3	4	5	5	17	Prospector	1
207	2019	MYOR	3	4	5	4	16	Prospector	1
208	2020	MYOR	3	4	5	3	15	Prospector	1
209	2021	MYOR	3	5	5	3	16	Prospector	1
210	2022	MYOR	4	5	5	4	18	Prospector	1
211	2013	PYFA	5	1	5	1	12	Defender	0
212	2014	PYFA	5	1	5	1	12	Defender	0
213	2015	PYFA	5	1	5	1	12	Defender	0
214	2016	PYFA	5	1	5	1	12	Defender	0
215	2017	PYFA	5	1	5	1	12	Defender	0
216	2018	PYFA	5	1	5	1	12	Defender	0
217	2019	PYFA	5	1	5	2	13	Prospector	1
218	2020	PYFA	5	3	5	2	15	Prospector	1
219	2021	PYFA	5	4	4	2	15	Prospector	1
220	2022	PYFA	5	2	3	1	11	Defender	0
221	2013	ROTI	5	4	4	1	14	Prospector	1
222	2014	ROTI	5	4	4	1	14	Prospector	1
223	2015	ROTI	5	4	4	1	14	Prospector	1
224	2016	ROTI	5	4	4	1	14	Prospector	1
225	2017	ROTI	5	2	4	3	14	Prospector	1
226	2018	ROTI	5	2	4	1	12	Defender	0

No.	Year	Code	EMP Score	Mtob Score	Market Score	PPEINT Score	Total Score	Type of Strategy	Dummy Code
227	2019	ROTI	5	2	5	1	13	Prospector	1
228	2020	ROTI	5	2	4	1	12	Defender	0
229	2021	ROTI	5	2	4	1	12	Defender	0
230	2022	ROTI	5	3	4	1	13	Prospector	1
231	2013	SKLT	5	1	3	2	11	Defender	0
232	2014	SKLT	5	1	3	3	12	Defender	0
233	2015	SKLT	5	2	3	3	13	Prospector	1
234	2016	SKLT	5	1	3	2	11	Defender	0
235	2017	SKLT	5	2	3	1	11	Defender	0
236	2018	SKLT	5	2	3	2	12	Defender	0
237	2019	SKLT	5	3	3	2	13	Prospector	1
238	2020	SKLT	5	3	3	2	13	Prospector	1
239	2021	SKLT	5	3	3	2	13	Prospector	1
240	2022	SKLT	5	2	3	2	12	Defender	0
241	2013	SMGR	1	5	5	1	12	Defender	0
242	2014	SMGR	1	5	5	1	12	Defender	0
243	2015	SMGR	1	5	5	1	12	Defender	0
244	2016	SMGR	1	5	5	1	12	Defender	0
245	2017	SMGR	1	5	5	1	12	Defender	0
246	2018	SMGR	1	5	5	1	12	Defender	0
247	2019	SMGR	1	5	5	1	12	Defender	0
248	2020	SMGR	1	5	5	1	12	Defender	0
249	2021	SMGR	1	4	5	1	11	Defender	0
250	2022	SMGR	2	4	5	1	12	Defender	0
251	2013	SMSM	1	5	1	1	8	Defender	0
252	2014	SMSM	1	5	1	1	8	Defender	0
253	2015	SMSM	1	5	1	1	8	Defender	0
254	2016	SMSM	1	5	3	1	10	Defender	0
255	2017	SMSM	1	5	3	1	10	Defender	0
256	2018	SMSM	1	5	1	1	8	Defender	0
257	2019	SMSM	1	5	1	3	10	Defender	0
258	2020	SMSM	1	5	3	5	14	Prospector	1
259	2021	SMSM	1	5	1	5	12	Defender	0
260	2022	SMSM	1	5	1	3	10	Defender	0
261	2013	STTP	3	2	1	2	8	Defender	0
262	2014	STTP	3	3	1	2	9	Defender	0
263	2015	STTP	2	3	2	2	9	Defender	0
264	2016	STTP	4	2	2	2	10	Defender	0

No.	Year	Code	EMP Score	Mtob Score	Market Score	PPEINT Score	Total Score	Type of Strategy	Dummy Code
265	2017	STTP	3	4	2	2	11	Defender	0
266	2018	STTP	4	2	2	3	11	Defender	0
267	2019	STTP	3	2	1	3	9	Defender	0
268	2020	STTP	3	4	1	2	10	Defender	0
269	2021	STTP	3	3	3	3	12	Defender	0
270	2022	STTP	3	3	3	3	12	Defender	0
271	2013	TRIS	5	1	3	5	14	Prospector	1
272	2014	TRIS	5	1	3	3	12	Defender	0
273	2015	TRIS	5	3	3	5	16	Prospector	1
274	2016	TRIS	5	3	1	5	14	Prospector	1
275	2017	TRIS	5	1	1	3	10	Defender	0
276	2018	TRIS	5	1	3	3	12	Defender	0
277	2019	TRIS	5	3	3	1	12	Defender	0
278	2020	TRIS	5	3	1	1	10	Defender	0
279	2021	TRIS	5	3	3	1	12	Defender	0
280	2022	TRIS	5	3	3	1	12	Defender	0
281	2013	TRST	2	1	1	1	5	Defender	0
282	2014	TRST	2	2	1	1	6	Defender	0
283	2015	TRST	2	1	1	1	5	Defender	0
284	2016	TRST	2	1	1	1	5	Defender	0
285	2017	TRST	3	2	3	1	9	Defender	0
286	2018	TRST	2	1	1	1	5	Defender	0
287	2019	TRST	2	1	4	1	8	Defender	0
288	2020	TRST	2	1	4	1	8	Defender	0
289	2021	TRST	3	3	4	1	11	Defender	0
290	2022	TRST	3	3	5	1	12	Defender	0
291	2013	TSPC	1	3	3	3	10	Defender	0
292	2014	TSPC	1	2	3	2	8	Defender	0
293	2015	TSPC	1	2	3	3	9	Defender	0
294	2016	TSPC	1	2	3	3	9	Defender	0
295	2017	TSPC	1	1	4	4	10	Defender	0
296	2018	TSPC	1	1	4	4	10	Defender	0
297	2019	TSPC	1	2	4	4	11	Defender	0
298	2020	TSPC	1	1	3	4	9	Defender	0
299	2021	TSPC	1	1	3	4	9	Defender	0
300	2022	TSPC	1	1	5	4	11	Defender	0
301	2013	ULTJ	2	4	4	3	13	Prospector	1
302	2014	ULTJ	2	3	4	3	12	Defender	0

No.	Year	Code	EMP Score	Mtob Score	Market Score	PPEINT Score	Total Score	Type of Strategy	Dummy Code
303	2015	ULTJ	2	3	4	3	12	Defender	0
304	2016	ULTJ	2	3	4	4	13	Prospector	1
305	2017	ULTJ	2	3	4	4	13	Prospector	1
306	2018	ULTJ	2	3	5	4	14	Prospector	1
307	2019	ULTJ	2	3	4	5	14	Prospector	1
308	2020	ULTJ	1	3	4	4	12	Defender	0
309	2021	ULTJ	1	4	4	4	13	Prospector	1
310	2022	ULTJ	1	3	4	3	11	Defender	0
311	2013	UNVR	1	5	5	1	12	Defender	0
312	2014	UNVR	1	5	5	1	12	Defender	0
313	2015	UNVR	1	5	5	1	12	Defender	0
314	2016	UNVR	1	5	5	1	12	Defender	0
315	2017	UNVR	1	5	5	1	12	Defender	0
316	2018	UNVR	1	5	5	1	12	Defender	0
317	2019	UNVR	1	5	5	1	12	Defender	0
318	2020	UNVR	1	5	5	1	12	Defender	0
319	2021	UNVR	1	5	5	1	12	Defender	0
320	2022	UNVR	1	5	5	1	12	Defender	0
321	2013	WIIM	5	1	3	5	14	Prospector	1
322	2014	WIIM	5	1	3	4	13	Prospector	1
323	2015	WIIM	5	1	2	4	12	Defender	0
324	2016	WIIM	5	1	4	5	15	Prospector	1
325	2017	WIIM	5	1	3	5	14	Prospector	1
326	2018	WIIM	5	1	4	4	14	Prospector	1
327	2019	WIIM	5	1	3	4	13	Prospector	1
328	2020	WIIM	5	1	3	4	13	Prospector	1
329	2021	WIIM	5	1	2	4	12	Defender	0
330	2022	WIIM	5	1	2	5	13	Prospector	1

4. **Tabulation of Cost Stickiness Measurements**

No.	Year	Code	SG&A and COGS year t	SG&A and COGS year t-1	Ln SG&A and COGS	Net Sales year t	Net Sales Year t-1	Ln Sales	DEC (1: decrease, 0: increase)	$\beta_2 DEC_{l,t} \times \Delta lnSALES_{l,t}$	Cost Stickiness
	2012	ALDO	294.997.054.310	-	-	279.603.768.317	-	-	-	-	-
1	2013	ALDO	355.387.040.221	294.997.054.310	0,18624	399.345.658.763	279.603.768.317	0,35645	0	0,0000	0,18
2	2014	ALDO	456.999.361.794	355.387.040.221	0,25147	493.881.857.454	399.345.658.763	0,21247	0	0,0000	0,27
3	2015	ALDO	490.444.889.110	456.999.361.794	0,07063	538.363.112.800	493.881.857.454	0,08624	0	0,0000	0,06
4	2016	ALDO	623.505.488.256	490.444.889.110	0,24004	666.434.061.412	538.363.112.800	0,21341	0	0,0000	0,23
5	2017	ALDO	659.056.625.393	623.505.488.256	0,05545	708.740.551.637	666.434.061.412	0,06155	0	0,0000	0,06
6	2018	ALDO	1.025.775.541.108	659.056.625.393	0,44239	1.178.378.628.125	708.740.551.637	0,50841	0	0,0000	0,41
7	2019	ALDO	956.365.692.118	1.025.775.541.108	-0,07006	1.096.435.817.888	1.178.378.628.125	-0,07207	1	-0,0721	-0,07
8	2020	ALDO	1.013.478.814.830	956.365.692.118	0,05800	1.105.920.883.249	1.096.435.817.888	0,00861	0	0,0000	0,03
9	2021	ALDO	1.318.412.711.872	1.013.478.814.830	0,26304	1.457.266.932.664	1.105.920.883.249	0,27588	0	0,0000	0,26
10	2022	ALDO	1.300.653.923.164	1.318.412.711.872	-0,01356	1.401.914.243.306	1.457.266.932.664	-0,03872	1	-0,0387	0,01
	2012	ARNA	884.758.755.667	-	-	1.113.663.603.211	-	-	-	-	-

No.	Year	Code	SG&A and COGS year t	SG&A and COGS year t-1	Ln SG&A and COGS	Net Sales year t	Net Sales Year t-1	Ln Sales	DEC (1: decrease, 0: increase)	$\beta_2 DEC_{l,t}$ × $\Delta lnSALES_{l,t}$	Cost Stickiness
11	2013	ARNA	1.073.278.301.377	884.758.755.667	0,19316	1.417.640.229.330	1.113.663.603.211	0,24134	0	0,0000	0,19
12	2014	ARNA	1.262.150.107.424	1.073.278.301.377	0,16210	1.609.758.677.687	1.417.640.229.330	0,12709	0	0,0000	0,18
13	2015	ARNA	1.182.357.921.439	1.262.150.107.424	-0,06531	1.291.926.384.471	1.609.758.677.687	-0,21995	1	-0,2199	0,04
14	2016	ARNA	1.377.614.661.803	1.182.357.921.439	0,15284	1.511.978.367.218	1.291.926.384.471	0,15728	0	0,0000	0,14
15	2017	ARNA	1.549.783.082.783	1.377.614.661.803	0,11776	1.732.985.361.870	1.511.978.367.218	0,13643	0	0,0000	0,12
16	2018	ARNA	1.752.750.481.582	1.549.783.082.783	0,12307	1.971.478.070.171	1.732.985.361.870	0,12894	0	0,0000	0,12
17	2019	ARNA	1.869.219.628.324	1.752.750.481.582	0,06433	2.151.801.131.686	1.971.478.070.171	0,08752	0	0,0000	0,05
18	2020	ARNA	1.795.780.253.151	1.869.219.628.324	-0,04008	2.211.743.593.136	2.151.801.131.686	0,02748	0	0,0000	-0,05
19	2021	ARNA	1.958.640.710.884	1.795.780.253.151	0,08681	2.554.880.982.584	2.211.743.593.136	0,14422	0	0,0000	0,07
20	2022	ARNA	1.844.354.727.680	1.958.640.710.884	-0,06012	2.586.665.297.217	2.554.880.982.584	0,01236	0	0,0000	-0,02
	2012	ASII	168.183.000.000.000	-	-	188.053.000.000.000	-	-	-	-	-
21	2013	ASII	175.277.000.000.000	168.183.000.000.000	0,04131	193.880.000.000.000	188.053.000.000.000	0,03052	0	0,0000	0,06

No.	Year	Code	SG&A and COGS year t	SG&A and COGS year t-1	Ln SG&A and COGS	Net Sales year t	Net Sales Year t-1	Ln Sales	DEC (1: decrease, 0: increase)	$\beta_2 DEC_{l,t} \times \Delta lnSALES_{l,t}$	Cost Stickiness
22	2014	ASII	181.538.000.000.000	175.277.000.000.000	0,03510	201.701.000.000.000	193.880.000.000.000	0,03955	0	0,0000	0,05
23	2015	ASII	166.984.000.000.000	181.538.000.000.000	-0,08357	184.196.000.000.000	201.701.000.000.000	-0,09079	1	-0,0908	-0,04
24	2016	ASII	163.550.000.000.000	166.984.000.000.000	-0,02078	181.084.000.000.000	184.196.000.000.000	-0,01704	1	-0,0170	-0,02
25	2017	ASII	185.731.000.000.000	163.550.000.000.000	0,12718	206.057.000.000.000	181.084.000.000.000	0,12919	0	0,0000	0,13
26	2018	ASII	212.337.000.000.000	185.731.000.000.000	0,13388	239.205.000.000.000	206.057.000.000.000	0,14917	0	0,0000	0,13
27	2019	ASII	210.982.000.000.000	212.337.000.000.000	-0,00640	237.166.000.000.000	239.205.000.000.000	-0,00856	1	-0,0086	-0,01
28	2020	ASII	161.956.000.000.000	210.982.000.000.000	-0,26445	175.046.000.000.000	237.166.000.000.000	-0,30371	1	-0,3037	-0,15
29	2021	ASII	207.952.000.000.000	161.956.000.000.000	0,24998	233.485.000.000.000	175.046.000.000.000	0,28807	0	0,0000	0,24
30	2022	ASII	259.178.000.000.000	207.952.000.000.000	0,22021	301.379.000.000.000	233.485.000.000.000	0,25525	0	0,0000	0,21
	2012	AUTO	7.801.951.000.000	-	-	8.277.485.000.000	-	-	-	-	-
31	2013	AUTO	10.088.438.000.000	7.801.951.000.000	0,25702	10.701.988.000.000	8.277.485.000.000	0,25689	0	0,0000	0,24
32	2014	AUTO	11.790.136.000.000	10.088.438.000.000	0,15587	12.255.427.000.000	10.701.988.000.000	0,13554	0	0,0000	0,17

No.	Year	Code	SG&A and COGS year t	SG&A and COGS year t-1	Ln SG&A and COGS	Net Sales year t	Net Sales Year t-1	Ln Sales	DEC (1: decrease, 0: increase)	$\beta_2 DEC_{l,t} \times \Delta lnSALES_{l,t}$	Cost Stickiness
33	2015	AUTO	11.347.705.000.000	11.790.136.000.000	-0,03825	11.723.787.000.000	12.255.427.000.000	-0,04435	1	-0,0443	-0,02
34	2016	AUTO	12.359.527.000.000	11.347.705.000.000	0,08541	12.806.867.000.000	11.723.787.000.000	0,08836	0	0,0000	0,07
37	2017	AUTO	13.203.406.000.000	12.359.527.000.000	0,06605	13.549.857.000.000	12.806.867.000.000	0,05639	0	0,0000	0,07
38	2018	AUTO	14.992.358.000.000	13.203.406.000.000	0,12707	15.356.381.000.000	13.549.857.000.000	0,12516	0	0,0000	0,13
39	2019	AUTO	14.898.982.000.000	14.992.358.000.000	-0,00625	15.444.775.000.000	15.356.381.000.000	0,00574	0	0,0000	-0,01
40	2020	AUTO	11.735.497.000.000	14.898.982.000.000	-0,23867	11.869.221.000.000	15.444.775.000.000	-0,26332	1	-0,2633	-0,14
41	2021	AUTO	15.002.502.000.000	11.735.497.000.000	0,24560	15.151.663.000.000	11.869.221.000.000	0,24416	0	0,0000	0,24
42	2022	AUTO	17.636.607.000.000	15.002.502.000.000	0,16176	18.579.927.000.000	15.151.663.000.000	0,20397	0	0,0000	0,16
	2012	CPIN	17.910.135.000.000	-	-	21.310.925.000.000	-	-	-	-	-
43	2013	CPIN	21.759.059.000.000	17.910.135.000.000	0,19466	25.662.992.000.000	21.310.925.000.000	0,18583	0	0,0000	0,19
44	2014	CPIN	26.523.417.000.000	21.759.059.000.000	0,19800	29.150.275.000.000	25.662.992.000.000	0,12741	0	0,0000	0,21
42	2015	CPIN	26.574.386.000.000	26.523.417.000.000	0,00192	29.920.628.000.000	29.150.275.000.000	0,02608	0	0,0000	-0,01

No.	Year	Code	SG&A and COGS year t	SG&A and COGS year t-1	Ln SG&A and COGS	Net Sales year t	Net Sales Year t-1	Ln Sales	DEC (1: decrease, 0: increase)	$\beta_2 DEC_{l,t} \times \Delta lnSALES_{l,t}$	Cost Stickiness
43	2016	CPIN	33.798.150.000.000	26.574.386.000.000	0,24046	38.256.857.000.000	29.920.628.000.000	0,24577	0	0,0000	0,23
44	2017	CPIN	45.715.201.000.000	33.798.150.000.000	0,30202	49.367.386.000.000	38.256.857.000.000	0,25497	0	0,0000	0,31
46	2018	CPIN	47.563.370.000.000	45.715.201.000.000	0,03963	53.957.604.000.000	49.367.386.000.000	0,08891	0	0,0000	0,05
47	2019	CPIN	37.335.218.000.000	47.563.370.000.000	-0,24213	42.501.146.000.000	53.957.604.000.000	-0,23867	1	-0,2387	-0,24
48	2020	CPIN	37.147.244.000.000	37.335.218.000.000	-0,00505	42.518.782.000.000	42.501.146.000.000	0,00041	0	0,0000	-0,02
49	2021	CPIN	47.087.924.000.000	37.147.244.000.000	0,23713	51.698.249.000.000	42.518.782.000.000	0,19548	0	0,0000	0,23
50	2022	CPIN	52.681.699.000.000	47.087.924.000.000	0,11225	56.867.544.000.000	51.698.249.000.000	0,09530	0	0,0000	0,12
	2012	DLTA	437.864.785.000	-	-	719.951.793.000	-	-	-	-	-
51	2013	DLTA	530.661.663.000	437.864.785.000	0,19221	867.066.542.000	719.951.793.000	0,18593	0	0,0000	0,19
52	2014	DLTA	521.599.302.000	530.661.663.000	-0,01722	879.253.383.000	867.066.542.000	0,01396	0	0,0000	-0,01
53	2015	DLTA	473.248.920.000	521.599.302.000	-0,09728	699.506.819.000	879.253.383.000	-0,22870	1	-0,2287	0,02
54	2016	DLTA	481.609.058.000	473.248.920.000	0,01751	768.455.378.000	699.506.819.000	0,09401	0	0,0000	0,01

No.	Year	Code	SG&A and COGS year t	SG&A and COGS year t-1	Ln SG&A and COGS	Net Sales year t	Net Sales Year t-1	Ln Sales	DEC (1: decrease, 0: increase)	$\beta_2 DEC_{l,t} \times \Delta lnSALES_{l,t}$	Cost Stickiness
55	2017	DLTA	445.703.912.000	481.609.058.000	-0,07748	777.308.328.000	768.455.378.000	0,01145	0	0,0000	-0,08
56	2018	DLTA	496.414.084.000	445.703.912.000	0,10776	893.006.350.000	777.308.328.000	0,13876	0	0,0000	0,11
57	2019	DLTA	465.288.678.000	496.414.084.000	-0,06475	827.136.727.000	893.006.350.000	-0,07662	1	-0,0766	-0,07
58	2020	DLTA	414.299.985.000	465.288.678.000	-0,11607	546.336.411.000	827.136.727.000	-0,41474	1	-0,4147	0,00
59	2021	DLTA	455.581.295.000	414.299.985.000	0,09498	681.205.785.000	546.336.411.000	0,22063	0	0,0000	0,08
60	2022	DLTA	508.972.283.000	455.581.295.000	0,11082	778.744.315.000	681.205.785.000	0,13382	0	0,0000	0,12
	2012	DVLA	900.072.324.000	-	-	1.087.379.869.000	-	-	-	-	-
61	2013	DVLA	954.248.525.000	900.072.324.000	0,05845	1.101.684.170.000	1.087.379.869.000	0,01307	0	0,0000	0,08
62	2014	DVLA	1.005.726.931.000	954.248.525.000	0,05254	1.103.821.775.000	1.101.684.170.000	0,00194	0	0,0000	0,07
63	2015	DVLA	1.187.761.607.000	1.005.726.931.000	0,16636	1.306.098.136.000	1.103.821.775.000	0,16827	0	0,0000	0,15
64	2016	DVLA	1.248.404.456.000	1.187.761.607.000	0,04980	1.451.356.680.000	1.306.098.136.000	0,10545	0	0,0000	0,04
65	2017	DVLA	1.365.405.132.000	1.248.404.456.000	0,08958	1.575.647.308.000	1.451.356.680.000	0,08217	0	0,0000	0,09

No.	Year	Code	SG&A and COGS year t	SG&A and COGS year t-1	Ln SG&A and COGS	Net Sales year t	Net Sales Year t-1	Ln Sales	DEC (1: decrease, 0: increase)	$\beta_2 DEC_{l,t}$ × $\Delta lnSALES_{l,t}$	Cost Stickiness
66	2018	DVLA	1.451.708.382.000	1.365.405.132.000	0,06129	1.699.657.296.000	1.575.647.308.000	0,07576	0	0,0000	0,07
67	2019	DVLA	1.519.592.159.000	1.451.708.382.000	0,04570	1.813.020.278.000	1.699.657.296.000	0,06457	0	0,0000	0,04
68	2020	DVLA	1.625.689.443.000	1.519.592.159.000	0,06749	1.829.699.557.000	1.813.020.278.000	0,00916	0	0,0000	0,04
69	2021	DVLA	1.711.196.324.000	1.625.689.443.000	0,05126	1.900.893.602.000	1.829.699.557.000	0,03817	0	0,0000	0,04
70	2022	DVLA	1.741.345.254.000	1.711.196.324.000	0,01747	1.917.041.442.000	1.900.893.602.000	0,00846	0	0,0000	0,04
	2012	GGRM	43.021.490.000.000	-	-	49.028.696.000.000	-	-	-	-	-
71	2013	GGRM	48.787.148.000.000	43.021.490.000.000	0,12577	55.436.954.000.000	49.028.696.000.000	0,12284	0	0,0000	0,13
72	2014	GGRM	56.612.129.000.000	48.787.148.000.000	0,14876	65.185.850.000.000	55.436.954.000.000	0,16200	0	0,0000	0,16
73	2015	GGRM	60.459.332.000.000	56.612.129.000.000	0,06575	70.365.573.000.000	65.185.850.000.000	0,07646	0	0,0000	0,06
74	2016	GGRM	66.301.831.000.000	60.459.332.000.000	0,09225	76.274.147.000.000	70.365.573.000.000	0,08063	0	0,0000	0,08
75	2017	GGRM	72.187.289.000.000	66.301.831.000.000	0,08505	83.305.925.000.000	76.274.147.000.000	0,08819	0	0,0000	0,09
76	2018	GGRM	84.614.393.000.000	72.187.289.000.000	0,15884	95.707.663.000.000	83.305.925.000.000	0,13878	0	0,0000	0,15
77	2019	GGRM	95.733.820.000.000	84.614.393.000.000	0,12347	110.523.819.000.000	95.707.663.000.000	0,14393	0	0,0000	0,10
78	2020	GGRM	104.670.564.000.000	95.733.820.000.000	0,08925	114.477.311.000.000	110.523.819.000.000	0,03515	0	0,0000	0,06

No.	Year	Code	SG&A and COGS year t	SG&A and COGS year t-1	Ln SG&A and COGS	Net Sales year t	Net Sales Year t-1	Ln Sales	DEC (1: decrease, 0: increase)	$\beta_2 DEC_{l,t} \times \Delta lnSALES_{l,t}$	Cost Stickiness
79	2021	GGRM	117.768.593.0 00.000	104.670.564.0 00.000	0,1179 0	124.881.266.0 00.000	114.477.311.00 0.000	0,086 99	0	0,0000	0,11
80	2022	GGRM	120.912.064.0 00.000	117.768.593.0 00.000	0,0263 4	124.682.692.0 00.000	124.881.266.00 0.000	- 0,001 59	1	-0,0016	0,05
	2012	HMSP	53.275.673.00 0.000	-	-	66.626.123.00 0.000	-	-	-	-	-
81	2013	HMSP	60.424.951.00 0.000	53.275.673.00 0.000	0,1259 2	75.025.207.00 0.000	66.626.123.000 .000	0,118 73	0	0,0000	0,13
82	2014	HMSP	66.884.720.00 0.000	60.424.951.00 0.000	0,1015 7	80.690.139.00 0.000	75.025.207.000 .000	0,072 79	0	0,0000	0,12
83	2015	HMSP	75.021.235.00 0.000	66.884.720.00 0.000	0,1148 0	89.069.306.00 0.000	80.690.139.000 0.000	0,098 80	0	0,0000	0,10
84	2016	HMSP	79.446.305.00 0.000	75.021.235.00 0.000	0,0573 1	95.466.657.00 0.000	89.069.306.000 .000	0,069 36	0	0,0000	0,04
85	2017	HMSP	82.980.139.00 0.000	79.446.305.00 0.000	0,0435 2	99.091.484.00 0.000	95.466.657.000 .000	0,037 27	0	0,0000	0,05
86	2018	HMSP	89.859.963.00 0.000	82.980.139.00 0.000	0,0796 5	106.741.891.0 00.000	99.091.484.000 .000	0,074 37	0	0,0000	0,08
87	2019	HMSP	88.978.089.00 0.000	89.859.963.00 0.000	- 0,0098 6	106.055.176.0 00.000	106.741.891.00 0.000	- 0,006 45	1	-0,0065	-0,01
88	2020	HMSP	82.023.054.00 0.000	88.978.089.00 0.000	- 0,0813 9	92.425.210.00 0.000	106.055.176.00 0.000	- 0,137 56	1	-0,1376	-0,05
89	2021	HMSP	90.509.061.00 0.000	82.023.054.00 0.000	0,0984 5	98.874.784.00 0.000	92.425.210.000 .000	0,067 45	0	0,0000	0,09

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90	2022	HMSP	103.458.138.0 00.000	90.509.061.00 0.000	0,1337 2	111.211.321.0 00.000	98.874.784.000 .000	0,117 58	0	0,0000	0,13
	2012	ICBP	18.871.222.00 0.000	-	-	21.716.913.00 0.000	-	-	-	-	-
91	2013	ICBP	22.360.309.00 0.000	18.871.222.00 0.000	0,1696 5	25.094.681.00 0.000	21.716.913.000 .000	0,144 56	0	0,0000	0,17
92	2014	ICBP	26.902.872.00 0.000	22.360.309.00 0.000	0,1849 5	30.022.463.00 0.000	25.094.681.000 .000	0,179 29	0	0,0000	0,20
93	2015	ICBP	27.833.303.00 0.000	26.902.872.00 0.000	0,0340 0	31.741.094.00 0.000	30.022.463.000 .000	0,055 67	0	0,0000	0,02
94	2016	ICBP	29.439.081.00 0.000	27.833.303.00 0.000	0,0560 9	34.375.236.00 0.000	31.741.094.000 .000	0,079 72	0	0,0000	0,04
95	2017	ICBP	30.228.937.00 0.000	29.439.081.00 0.000	0,0264 8	35.606.593.00 0.000	34.375.236.000 .000	0,035 19	0	0,0000	0,03
96	2018	ICBP	32.641.650.00 0.000	30.228.937.00 0.000	0,0767 9	38.413.407.00 0.000	35.606.593.000 .000	0,075 88	0	0,0000	0,08
97	2019	ICBP	35.018.561.00 0.000	32.641.650.00 0.000	0,0702 9	42.296.703.00 0.000	38.413.407.000 .000	0,096 30	0	0,0000	0,06
98	2020	ICBP	37.523.656.00 0.000	35.018.561.00 0.000	0,0690 9	46.641.048.00 0.000	42.296.703.000 .000	0,097 77	0	0,0000	0,04
99	2021	ICBP	45.254.080.00 0.000	37.523.656.00 0.000	0,1873 2	56.803.733.00 0.000	46.641.048.000 .000	0,197 12	0	0,0000	0,18
100	2022	ICBP	52.383.471.00 0.000	45.254.080.00 0.000	0,1463 0	64.797.516.00 0.000	56.803.733.000 .000	0,131 67	0	0,0000	0,15
	2012	IGAR	499.863.235.5 34	-	-	556.445.856.9 27	-	-	-	-	-
101	2013	IGAR	582.548.058.2 84	499.863.235.5 34	0,1530 8	643.403.327.2 63	556.445.856.92 7	0,145 20	0	0,0000	0,16

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102	2014	IGAR	657.965.968.707	582.548.058.284	0,12174	737.863.227.409	643.403.327.263	0,13699	0	0,0000	0,14
103	2015	IGAR	609.782.649.063	657.965.968.707	-0,07605	677.331.846.043	737.863.227.409	-0,08560	1	-0,0856	-0,04
104	2016	IGAR	698.752.753.346	609.782.649.063	0,13619	792.794.834.768	677.331.846.043	0,15740	0	0,0000	0,12
105	2017	IGAR	677.219.397.387	698.752.753.346	-0,03130	761.926.952.217	792.794.834.768	-0,03971	1	-0,0397	-0,02
106	2018	IGAR	724.145.896.874	677.219.397.387	0,06700	777.316.506.801	761.926.952.217	0,02000	0	0,0000	0,07
107	2019	IGAR	704.125.867.680	724.145.896.874	-0,02804	776.541.441.414	777.316.506.801	-0,00100	1	-0,0010	-0,02
108	2020	IGAR	662.338.215.322	704.125.867.680	-0,06118	739.402.296.030	776.541.441.414	-0,04901	1	-0,0490	-0,06
109	2021	IGAR	846.421.922.429	662.338.215.322	0,24524	970.111.806.482	739.402.296.030	0,27157	0	0,0000	0,24
110	2022	IGAR	961.178.642.823	846.421.922.429	0,12714	1.083.672.730.660	970.111.806.482	0,11070	0	0,0000	0,13
	2012	INCI	65.408.176.487	-	-	64.628.362.916	-	-	-	-	-
111	2013	INCI	74.966.625.465	65.408.176.487	0,13640	81.244.267.131	64.628.362.916	0,22881	0	0,0000	0,14
112	2014	INCI	103.786.244.446	74.966.625.465	0,32529	110.023.088.698	81.244.267.131	0,30323	0	0,0000	0,34

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113	2015	INCI	125.755.660.288	103.786.244.446	0,19201	136.668.408.270	110.023.088.698	0,21687	0	0,0000	0,18
114	2016	INCI	160.869.381.494	125.755.660.288	0,24625	176.067.561.639	136.668.408.270	0,25331	0	0,0000	0,23
115	2017	INCI	247.190.114.675	160.869.381.494	0,42956	269.706.737.385	176.067.561.639	0,42647	0	0,0000	0,45
116	2018	INCI	348.429.525.888	247.190.114.675	0,34328	367.961.600.950	269.706.737.385	0,31064	0	0,0000	0,32
117	2019	INCI	363.057.838.747	348.429.525.888	0,04113	381.433.524.206	367.961.600.950	0,03596	0	0,0000	0,03
118	2020	INCI	356.969.875.736	363.057.838.747	-0,01691	394.017.538.408	381.433.524.206	0,03246	0	0,0000	-0,03
119	2021	INCI	508.222.524.271	356.969.875.736	0,35327	520.716.778.853	394.017.538.408	0,27881	0	0,0000	0,35
120	2022	INCI	455.370.542.917	508.222.524.271	-0,10981	478.206.615.319	520.716.778.853	-0,08516	1	-0,0852	-0,07
	2012	INDF	43.448.279.000.000	-	-	50.201.548.000.000	-	-	-	-	-
121	2013	INDF	50.066.257.000.000	43.448.279.000.000	0,14178	55.623.657.000.000	50.201.548.000.000	0,10256	0	0,0000	0,15
122	2014	INDF	56.609.219.000.000	50.066.257.000.000	0,12282	63.594.452.000.000	55.623.657.000.000	0,13392	0	0,0000	0,14
123	2015	INDF	57.184.938.000.000	56.609.219.000.000	0,01012	64.061.947.000.000	63.594.452.000.000	0,00732	0	0,0000	0,00
124	2016	INDF	58.387.981.000.000	57.184.938.000.000	0,02082	66.659.484.000.000	64.061.947.000.000	0,03975	0	0,0000	0,01

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125	2017	INDF	61.723.938.000.000	58.387.981.000.000	0,05556	70.186.618.000.000	66.659.484.000.000	0,05156	0	0,0000	0,06
126	2018	INDF	65.466.446.000.000	61.723.938.000.000	0,05887	73.394.728.000.000	70.186.618.000.000	0,04469	0	0,0000	0,06
127	2019	INDF	67.063.123.000.000	65.466.446.000.000	0,02410	76.592.955.000.000	73.394.728.000.000	0,04265	0	0,0000	0,02
128	2020	INDF	69.074.425.000.000	67.063.123.000.000	0,02955	81.731.469.000.000	76.592.955.000.000	0,06493	0	0,0000	0,01
129	2021	INDF	82.213.099.000.000	69.074.425.000.000	0,17413	99.345.618.000.000	81.731.469.000.000	0,19517	0	0,0000	0,17
130	2022	INDF	92.147.295.000.000	82.213.099.000.000	0,11407	110.830.272.000.000	99.345.618.000.000	0,10940	0	0,0000	0,12
	2012	INTP	11.445.115.000.000	-	-	17.290.337.000.000	-	-	-	-	-
131	2013	INTP	12.716.329.000.000	11.445.115.000.000	0,10532	18.691.286.000.000	17.290.337.000.000	0,07791	0	0,0000	0,12
132	2014	INTP	14.116.489.000.000	12.716.329.000.000	0,10446	19.996.264.000.000	18.691.286.000.000	0,06749	0	0,0000	0,12
133	2015	INTP	12.768.639.000.000	14.116.489.000.000	-0,10035	17.798.055.000.000	19.996.264.000.000	-0,11646	1	-0,1165	-0,04
134	2016	INTP	11.744.303.000.000	12.768.639.000.000	-0,08362	15.361.894.000.000	17.798.055.000.000	-0,14720	1	-0,1472	-0,03
135	2017	INTP	12.503.693.000.000	11.744.303.000.000	0,06266	14.431.211.000.000	15.361.894.000.000	-0,06250	1	-0,0625	0,09

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136	2018	INTP	14.143.804.000.000	12.503.693.000.000	0,12325	15.190.283.000.000	14.431.211.000.000	0,05126	0	0,0000	0,12
137	2019	INTP	13.942.261.000.000	14.143.804.000.000	-0,01435	15.939.348.000.000	15.190.283.000.000	0,04813	0	0,0000	-0,01
138	2020	INTP	12.224.285.000.000	13.942.261.000.000	-0,13150	14.184.322.000.000	15.939.348.000.000	-0,11665	1	-0,1167	-0,09
139	2021	INTP	12.864.365.000.000	12.224.285.000.000	0,05104	14.771.906.000.000	14.184.322.000.000	0,04059	0	0,0000	0,04
140	2022	INTP	14.519.417.000.000	12.864.365.000.000	0,12103	16.328.278.000.000	14.771.906.000.000	0,10017	0	0,0000	0,12
	2012	JPFA	16.164.448.000.000	-	-	17.832.702.000.000	-	-	-	-	-
141	2013	JPFA	19.609.449.000.000	16.164.448.000.000	0,19320	21.412.085.000.000	17.832.702.000.000	0,18292	0	0,0000	0,19
142	2014	JPFA	23.174.255.000.000	19.609.449.000.000	0,16703	24.458.880.000.000	21.412.085.000.000	0,13304	0	0,0000	0,18
143	2015	JPFA	23.294.970.000.000	23.174.255.000.000	0,00520	25.022.913.000.000	24.458.880.000.000	0,02280	0	0,0000	0,00
144	2016	JPFA	23.971.776.000.000	23.294.970.000.000	0,02864	27.063.310.000.000	25.022.913.000.000	0,07839	0	0,0000	0,02
145	2017	JPFA	27.447.701.000.000	23.971.776.000.000	0,13541	29.602.688.000.000	27.063.310.000.000	0,08969	0	0,0000	0,14
146	2018	JPFA	32.657.970.000.000	27.447.701.000.000	0,17381	36.228.261.000.000	29.602.688.000.000	0,20197	0	0,0000	0,17
147	2019	JPFA	35.736.342.000.000	32.657.970.000.000	0,09008	38.872.084.000.000	36.228.261.000.000	0,07044	0	0,0000	0,08

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148	2020	JPFA	34.329.919.000.000	35.736.342.000.000	-0,04015	36.964.948.000.000	38.872.084.000.000	-0,05031	1	-0,0503	-0,04
149	2021	JPFA	41.656.627.000.000	34.329.919.000.000	0,19344	44.878.300.000.000	36.964.948.000.000	0,19398	0	0,0000	0,19
150	2022	JPFA	46.169.216.000.000	41.656.627.000.000	0,10285	48.972.085.000.000	44.878.300.000.000	0,08730	0	0,0000	0,11
	2012	KAEF	3.471.673.544.742	-	-	3.734.241.101.309	-	-	-	-	-
151	2013	KAEF	4.098.540.833.749	3.471.673.544.742	0,16599	4.348.073.988.385	3.734.241.101.309	0,15219	0	0,0000	0,17
152	2014	KAEF	4.235.373.732.128	4.098.540.833.749	0,03284	4.521.024.379.759	4.348.073.988.385	0,03901	0	0,0000	0,05
153	2015	KAEF	4.550.673.795.851	4.235.373.732.128	0,07180	4.860.371.483.524	4.521.024.379.759	0,07238	0	0,0000	0,06
154	2016	KAEF	5.427.391.336.968	4.550.673.795.851	0,17618	5.811.502.656.431	4.860.371.483.524	0,17872	0	0,0000	0,16
155	2017	KAEF	5.717.557.449.752	5.427.391.336.968	0,05208	6.127.479.369.403	5.811.502.656.431	0,05294	0	0,0000	0,06
156	2018	KAEF	7.692.236.117.000	5.717.557.449.752	0,29667	8.459.247.287.000	6.127.479.369.403	0,32248	0	0,0000	0,28
157	2019	KAEF	9.109.104.987.000	7.692.236.117.000	0,16906	9.400.535.476.000	8.459.247.287.000	0,10551	0	0,0000	0,14
158	2020	KAEF	9.675.053.624.000	9.109.104.987.000	0,06028	10.006.173.023.000	9.400.535.476.000	0,06244	0	0,0000	0,03
159	2021	KAEF	11.961.874.279.000	9.675.053.624.000	0,21217	12.857.626.593.000	10.006.173.023.000	0,25073	0	0,0000	0,20

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160	2022	KAEF	9.299.569.239.000	11.961.874.279.000	-0,25176	9.606.145.359.000	12.857.626.593.000	-0,29153	1	-0,2915	-0,19
	2012	KBLF	11.327.890.311.429	-	-	13.636.405.178.957	-	-	-	-	-
161	2013	KBLF	13.317.823.769.564	11.327.890.311.429	0,16184	16.002.131.057.048	13.636.405.178.957	0,15998	0	0,0000	0,16
162	2014	KBLF	14.462.711.520.256	13.317.823.769.564	0,08247	17.368.532.547.558	16.002.131.057.048	0,08194	0	0,0000	0,10
163	2015	KBLF	15.077.295.888.205	14.462.711.520.256	0,04162	17.887.464.223.321	17.368.532.547.558	0,02944	0	0,0000	0,03
164	2016	KBLF	16.125.869.213.413	15.077.295.888.205	0,06723	19.374.230.957.505	17.887.464.223.321	0,07984	0	0,0000	0,05
165	2017	KBLF	16.728.472.666.658	16.125.869.213.413	0,03669	20.182.120.166.616	19.374.230.957.505	0,04085	0	0,0000	0,04
166	2018	KBLF	17.617.952.477.564	16.728.472.666.658	0,05181	21.074.306.186.027	20.182.120.166.616	0,04326	0	0,0000	0,06
167	2019	KBLF	19.036.599.216.461	17.617.952.477.564	0,07744	22.633.476.361.038	21.074.306.186.027	0,07138	0	0,0000	0,06
168	2020	KBLF	19.272.354.187.150	19.036.599.216.461	0,01231	23.112.654.991.224	22.633.476.361.038	0,02095	0	0,0000	-0,01
169	2021	KBLF	21.949.061.604.552	19.272.354.187.150	0,13005	26.261.194.512.313	23.112.654.991.224	0,12771	0	0,0000	0,12
170	2022	KBLF	24.410.734.013.877	21.949.061.604.552	0,10630	28.933.502.646.719	26.261.194.512.313	0,09691	0	0,0000	0,11
	2012	KDSI	1.243.821.910.626	-	-	1.301.332.627.213	-	-	-	-	-

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171	2013	KDSI	1.334.512.099.886	1.243.821.910.626	0,07038	1.386.314.584.485	1.301.332.627.213	0,06326	0	0,0000	0,09
172	2014	KDSI	1.539.242.347.013	1.334.512.099.886	0,14272	1.626.232.662.544	1.386.314.584.485	0,15962	0	0,0000	0,16
173	2015	KDSI	1.663.432.824.452	1.539.242.347.013	0,07759	1.713.946.192.967	1.626.232.662.544	0,05253	0	0,0000	0,07
174	2016	KDSI	1.892.213.909.352	1.663.432.824.452	0,12886	1.995.337.146.834	1.713.946.192.967	0,15201	0	0,0000	0,12
175	2017	KDSI	2.115.260.321.002	1.892.213.909.352	0,11143	2.245.519.457.754	1.995.337.146.834	0,11812	0	0,0000	0,12
176	2018	KDSI	2.190.948.751.219	2.115.260.321.002	0,03516	2.327.951.625.610	2.245.519.457.754	0,03605	0	0,0000	0,04
177	2019	KDSI	2.080.616.095.952	2.190.948.751.219	-0,05167	2.234.941.096.110	2.327.951.625.610	-0,04077	1	-0,0408	-0,05
178	2020	KDSI	1.809.076.412.898	2.080.616.095.952	-0,13985	1.923.089.935.410	2.234.941.096.110	-0,15028	1	-0,1503	-0,09
179	2021	KDSI	2.115.499.499.491	1.809.076.412.898	0,15647	2.241.085.126.185	1.923.089.935.410	0,15303	0	0,0000	0,15
180	2022	KDSI	2.224.124.649.539	2.115.499.499.491	0,05007	2.352.412.014.545	2.241.085.126.185	0,04848	0	0,0000	0,07
	2012	MERK	788.036.775.000	-	-	929.876.824.000	-	-	-	-	-
181	2013	MERK	613.574.857.000	788.036.775.000	-0,25024	805.746.000.000	929.876.824.000	-0,14328	1	-0,1433	-0,34

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182	2014	MERK	668.955.384.000	613.574.857.000	0,08642	863.207.535.000	805.746.000.000	0,06889	0	0,0000	0,10
183	2015	MERK	798.704.596.000	668.955.384.000	0,17727	983.446.471.000	863.207.535.000	0,13041	0	0,0000	0,16
184	2016	MERK	820.217.789.000	798.704.596.000	0,02658	1.034.806.890.000	983.446.471.000	0,05091	0	0,0000	0,01
185	2017	MERK	540.546.354.000	820.217.789.000	-0,41699	582.002.470.000	1.034.806.890.000	-0,57550	1	-0,5755	-0,25
186	2018	MERK	568.414.353.000	540.546.354.000	0,05027	611.958.076.000	582.002.470.000	0,05019	0	0,0000	0,06
187	2019	MERK	620.135.289.000	568.414.353.000	0,08709	744.634.530.000	611.958.076.000	0,19623	0	0,0000	0,07
188	2020	MERK	547.130.393.000	620.135.289.000	-0,12525	655.847.125.000	744.634.530.000	-0,12697	1	-0,1270	-0,09
189	2021	MERK	873.976.259.000	547.130.393.000	0,46837	1.064.394.815.000	655.847.125.000	0,48423	0	0,0000	0,47
190	2022	MERK	887.295.574.000	873.976.259.000	0,01512	1.124.599.738.000	1.064.394.815.000	0,05502	0	0,0000	0,04
	2012	MLBI	965.098.000.000	-		1.566.984.000.000	-	-	-	-	-
191	2013	MLBI	2.008.883.000.000	965.098.000.000	0,73310	3.561.989.000.000	1.566.984.000.000	0,82117	0	0,0000	0,64
192	2014	MLBI	1.838.513.000.000	2.008.883.000.000	-0,08862	2.988.501.000.000	3.561.989.000.000	-0,17555	1	-0,1755	0,00

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193	2015	MLBI	1.756.018.000.000	1.838.513.000.000	-0,04591	2.696.318.000.000	2.988.501.000.000	-0,10288	1	-0,1029	0,00
194	2016	MLBI	1.890.779.000.000	1.756.018.000.000	0,07394	3.263.311.000.000	2.696.318.000.000	0,19086	0	0,0000	0,06
195	2017	MLBI	1.818.627.000.000	1.890.779.000.000	-0,03891	3.389.736.000.000	3.263.311.000.000	0,03801	0	0,0000	-0,04
196	2018	MLBI	1.901.859.000.000	1.818.627.000.000	0,04475	3.574.801.000.000	3.389.736.000.000	0,05316	0	0,0000	0,05
197	2019	MLBI	2.002.132.000.000	1.901.859.000.000	0,05138	3.711.405.000.000	3.574.801.000.000	0,03750	0	0,0000	0,04
198	2020	MLBI	1.494.617.000.000	2.002.132.000.000	-0,29234	1.985.009.000.000	3.711.405.000.000	-0,62579	1	-0,6258	-0,08
199	2021	MLBI	1.600.982.000.000	1.494.617.000.000	0,06875	2.473.681.000.000	1.985.009.000.000	0,22008	0	0,0000	0,06
200	2022	MLBI	1.850.618.000.000	1.600.982.000.000	0,14490	3.114.907.000.000	2.473.681.000.000	0,23049	0	0,0000	0,14
	2012	MYOR	9.354.065.853.392	-	-	10.510.625.669.832	-	-	-	-	-
201	2013	MYOR	10.713.027.835.648	9.354.065.853.392	0,13565	12.017.837.133.337	10.510.625.669.832	0,13401	0	0,0000	0,14
202	2014	MYOR	13.278.224.244.237	10.713.027.835.648	0,21466	14.169.088.278.238	12.017.837.133.337	0,16467	0	0,0000	0,23
203	2015	MYOR	12.956.109.802.860	13.278.224.244.237	-0,02456	14.818.730.635.847	14.169.088.278.238	0,04483	0	0,0000	-0,03

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204	2016	MYOR	16.034.717.65 5.491	12.956.109.80 2.860	0,2131 9	18.349.959.89 8.358	14.818.730.635 .847	0,213 74	0	0,0000	0,20
205	2017	MYOR	18.356.114.55 8.423	16.034.717.65 5.491	0,1352 1	20.816.673.94 6.473	18.349.959.898 .358	0,126 13	0	0,0000	0,14
206	2018	MYOR	21.432.910.38 7.719	18.356.114.55 8.423	0,1549 6	24.060.802.39 5.725	20.816.673.946 .473	0,144 83	0	0,0000	0,15
207	2019	MYOR	21.854.474.92 1.513	21.432.910.38 7.719	0,0194 8	25.026.739.47 2.547	24.060.802.395 .725	0,039 36	0	0,0000	0,02
208	2020	MYOR	21.646.025.54 8.496	21.854.474.92 1.513	- 0,0095 8	24.476.953.74 2.651	25.026.739.472 .547	- 0,022 21	1	-0,0222	-0,02
209	2021	MYOR	26.132.242.40 8.028	21.646.025.54 8.496	0,1883 5	30.669.405.96 7.404	24.476.953.742 .651	0,225 53	0	0,0000	0,18
210	2022	MYOR	28.236.291.32 5.703	26.132.242.40 8.028	0,0774 4	27.904.558.32 2.183	30.669.405.967 .404	- 0,094 48	1	-0,0945	0,08
	2012	PYFA	167.832.910.6 36	-	-	176.730.979.6 72	-	-	-	-	-
211	2013	PYFA	182.828.909.1 47	167.832.910.6 36	0,0855 8	192.555.731.1 80	176.730.979.67 2	0,085 76	0	0,0000	0,10
212	2014	PYFA	214.923.000.6 18	182.828.909.1 47	0,1617 3	222.302.407.5 28	192.555.731.18 0	0,143 65	0	0,0000	0,18
213	2015	PYFA	208.495.945.8 88	214.923.000.6 18	- 0,0303 6	217.843.921.4 22	222.302.407.52 8	- 0,020 26	1	-0,0203	-0,03
214	2016	PYFA	206.729.244.9 88	208.495.945.8 88	- 0,0085 1	216.951.583.9 53	217.843.921.42 2	- 0,004 10	1	-0,0041	-0,02

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215	2017	PYFA	211.187.073.535	206.729.244.988	0,02133	223.002.490.278	216.951.583.953	0,02751	0	0,0000	0,02
216	2018	PYFA	237.307.700.385	211.187.073.535	0,11661	250.445.853.364	223.002.490.278	0,11606	0	0,0000	0,12
217	2019	PYFA	236.194.313.363	237.307.700.385	-0,00470	247.114.772.587	250.445.853.364	-0,01339	1	-0,0134	-0,01
218	2020	PYFA	247.847.318.235	236.194.313.363	0,04816	277.398.061.739	247.114.772.587	0,11560	0	0,0000	0,02
219	2021	PYFA	605.925.980.722	247.847.318.235	0,89394	630.530.235.961	277.398.061.739	0,82111	0	0,0000	0,91
220	2022	PYFA	751.013.706.840	605.925.980.722	0,21467	715.425.027.099	630.530.235.961	0,12632	0	0,0000	0,20
	2012	ROTI	1.004.671.113.271	-	-	1.190.825.893.340	-	-	-	-	-
221	2013	ROTI	1.295.593.137.746	1.004.671.113.271	0,25431	1.505.519.937.691	1.190.825.893.340	0,23449	0	0,0000	0,24
222	2014	ROTI	1.617.567.860.514	1.295.593.137.746	0,22196	1.880.262.901.697	1.505.519.937.691	0,22227	0	0,0000	0,24
223	2015	ROTI	1.758.644.692.824	1.617.567.860.514	0,08362	2.174.501.712.899	1.880.262.901.697	0,14539	0	0,0000	0,07
224	2016	ROTI	2.138.969.125.754	1.758.644.692.824	0,19578	2.521.920.968.213	2.174.501.712.899	0,14822	0	0,0000	0,18
225	2017	ROTI	2.290.143.577.003	2.138.969.125.754	0,06829	2.491.100.179.560	2.521.920.968.213	-0,01230	1	-0,0123	0,08
226	2018	ROTI	2.628.086.303.082	2.290.143.577.003	0,13764	2.766.545.866.684	2.491.100.179.560	0,10488	0	0,0000	0,14

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227	2019	ROTI	3.043.647.129.859	2.628.086.303.082	0,1468 0	3.337.022.314.624	2.766.545.866.684	0,187 48	0	0,0000	0,12
228	2020	ROTI	3.008.400.573.923	3.043.647.129.859	- 0,0116 5	3.212.034.546.032	3.337.022.314.624	- 0,038 17	1	-0,0382	-0,02
229	2021	ROTI	2.930.511.639.041	3.008.400.573.923	- 0,0262 3	3.287.623.237.457	3.212.034.546.032	0,023 26	0	0,0000	-0,04
230	2022	ROTI	3.367.084.978.080	2.930.511.639.041	0,1388 7	3.935.182.048.668	3.287.623.237.457	0,179 79	0	0,0000	0,14
	2012	SKLT	388.772.817.777	-	-	401.724.215.506	-	-	-	-	-
231	2013	SKLT	547.357.367.539	388.772.817.777	0,3421 1	567.048.547.543	401.724.215.506	0,344 68	0	0,0000	0,31
232	2014	SKLT	654.348.735.944	547.357.367.539	0,1785 4	681.419.524.161	567.048.547.543	0,183 73	0	0,0000	0,19
233	2015	SKLT	711.521.409.701	654.348.735.944	0,0837 7	745.107.731.208	681.419.524.161	0,089 35	0	0,0000	0,07
234	2016	SKLT	800.243.662.662	711.521.409.701	0,1175 1	833.850.372.883	745.107.731.208	0,112 53	0	0,0000	0,10
235	2017	SKLT	872.895.030.562	800.243.662.662	0,0869 0	914.188.759.779	833.850.372.883	0,091 98	0	0,0000	0,09
236	2018	SKLT	990.863.991.687	872.895.030.562	0,1267 6	1.045.029.834.378	914.188.759.779	0,133 76	0	0,0000	0,13
237	2019	SKLT	1.199.876.633.801	990.863.991.687	0,1914 0	1.281.116.255.236	1.045.029.834.378	0,203 69	0	0,0000	0,16

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238	2020	SKLT	1.178.956.856.084	1.199.876.633.801	-0,01759	1.253.700.810.596	1.281.116.255.236	-0,02163	1	-0,0216	-0,03
239	2021	SKLT	1.258.571.445.972	1.178.956.856.084	0,06535	1.356.846.112.540	1.253.700.810.596	0,07906	0	0,0000	0,05
240	2022	SKLT	1.451.148.528.286	1.258.571.445.972	0,14238	1.539.310.803.104	1.356.846.112.540	0,12617	0	0,0000	0,14
	2012	SMGR	13.489.233.609.000	-	-	19.598.247.884.000	-	-	-	-	-
241	2013	SMGR	17.528.855.969.000	13.489.233.609.000	0,26196	24.501.240.780.000	19.598.247.884.000	0,22328	0	0,0000	0,25
242	2014	SMGR	20.039.917.241.000	17.528.855.969.000	0,13388	26.987.035.135.000	24.501.240.780.000	0,09663	0	0,0000	0,15
243	2015	SMGR	21.048.630.234.000	20.039.917.241.000	0,04911	26.948.004.471.000	26.987.035.135.000	-0,00145	1	-0,0014	0,04
244	2016	SMGR	21.160.891.589.000	21.048.630.234.000	0,00532	26.134.306.138.000	26.948.004.471.000	-0,03066	1	-0,0307	0,01
245	2017	SMGR	25.180.425.519.000	21.160.891.589.000	0,17391	27.813.664.176.000	26.134.306.138.000	0,06228	0	0,0000	0,18
246	2018	SMGR	25.914.361.000.000	25.180.425.519.000	0,02873	30.687.626.000.000	27.813.664.176.000	0,09833	0	0,0000	0,04
247	2019	SMGR	34.275.028.000.000	25.914.361.000.000	0,27962	40.368.107.000.000	30.687.626.000.000	0,27418	0	0,0000	0,23

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248	2020	SMGR	29.519.014.000.000	34.275.028.000.000	-0,14938	35.171.668.000.000	40.368.107.000.000	-0,13780	1	-0,1378	-0,10
249	2021	SMGR	31.466.152.000.000	29.519.014.000.000	0,06388	36.702.301.000.000	35.171.668.000.000	0,04260	0	0,0000	0,05
250	2022	SMGR	31.809.451.000.000	31.466.152.000.000	0,01085	36.378.597.000.000	36.702.301.000.000	-0,00886	1	-0,0089	0,03
	2012	SMSM	1.880.439.794.870	-	-	2.269.289.777.481	-	-	-	-	-
251	2013	SMSM	1.958.178.000.000	1.880.439.794.870	0,04051	2.381.889.000.000	2.269.289.777.481	0,04843	0	0,0000	0,06
252	2014	SMSM	2.083.913.000.000	1.958.178.000.000	0,06223	2.632.860.000.000	2.381.889.000.000	0,10018	0	0,0000	0,08
253	2015	SMSM	2.222.220.000.000	2.083.913.000.000	0,06426	2.802.924.000.000	2.632.860.000.000	0,06259	0	0,0000	0,05
254	2016	SMSM	2.250.869.000.000	2.222.220.000.000	0,01281	2.879.876.000.000	2.802.924.000.000	0,02708	0	0,0000	0,00
255	2017	SMSM	2.664.341.000.000	2.250.869.000.000	0,16864	3.339.964.000.000	2.879.876.000.000	0,14821	0	0,0000	0,18
256	2018	SMSM	3.114.969.000.000	2.664.341.000.000	0,15626	3.933.353.000.000	3.339.964.000.000	0,16353	0	0,0000	0,15
257	2019	SMSM	3.143.697.000.000	3.114.969.000.000	0,00918	3.935.811.000.000	3.933.353.000.000	0,00062	0	0,0000	0,01
258	2020	SMSM	2.555.179.000.000	3.143.697.000.000	-0,20728	3.233.693.000.000	3.935.811.000.000	-0,19649	1	-0,1965	-0,14

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259	2021	SMSM	3.257.139.000.000	2.555.179.000.000	0,24273	4.162.931.000.000	3.233.693.000.000	0,25259	0	0,0000	0,24
260	2022	SMSM	3.771.789.000.000	3.257.139.000.000	0,14670	4.894.164.000.000	4.162.931.000.000	0,16182	0	0,0000	0,15
	2012	STTP	1.158.294.893.418	-	-	1.283.736.251.902	-	-	-	-	-
261	2013	STTP	1.511.083.985.746	1.158.294.893.418	0,26588	1.694.935.468.814	1.283.736.251.902	0,27787	0	0,0000	0,25
262	2014	STTP	1.946.906.986.536	1.511.083.985.746	0,25341	2.170.464.194.350	1.694.935.468.814	0,24730	0	0,0000	0,27
263	2015	STTP	2.248.068.931.630	1.946.906.986.536	0,14383	2.544.277.844.656	2.170.464.194.350	0,15891	0	0,0000	0,13
264	2016	STTP	2.346.955.548.269	2.248.068.931.630	0,04305	2.629.107.367.897	2.544.277.844.656	0,03280	0	0,0000	0,03
265	2017	STTP	2.499.878.352.652	2.346.955.548.269	0,06312	2.825.409.180.889	2.629.107.367.897	0,07201	0	0,0000	0,07
266	2018	STTP	2.488.797.983.291	2.499.878.352.652	-0,00444	2.826.957.323.397	2.825.409.180.889	0,00055	0	0,0000	0,00
267	2019	STTP	2.893.276.124.294	2.488.797.983.291	0,15059	3.512.509.168.853	2.826.957.323.397	0,21713	0	0,0000	0,13
268	2020	STTP	3.097.673.301.381	2.893.276.124.294	0,06826	3.846.300.254.825	3.512.509.168.853	0,09078	0	0,0000	0,04
269	2021	STTP	3.613.113.847.163	3.097.673.301.381	0,15392	4.241.856.914.012	3.846.300.254.825	0,09789	0	0,0000	0,14
270	2022	STTP	4.349.423.031.238	3.613.113.847.163	0,18547	4.931.553.771.470	4.241.856.914.012	0,15065	0	0,0000	0,18

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	2012	TRIS	500.041.133.935	-	-	558.886.515.975	-	-	-	-	-
271	2013	TRIS	646.407.939.163	500.041.133.935	0,25674	709.945.585.382	558.886.515.975	0,23924	0	0,0000	0,24
272	2014	TRIS	693.307.559.110	646.407.939.163	0,07004	746.828.922.732	709.945.585.382	0,05065	0	0,0000	0,08
273	2015	TRIS	791.349.419.357	693.307.559.110	0,13227	859.743.472.895	746.828.922.732	0,14080	0	0,0000	0,12
274	2016	TRIS	855.079.356.911	791.349.419.357	0,07745	901.909.489.240	859.743.472.895	0,04788	0	0,0000	0,06
275	2017	TRIS	740.398.335.250	855.079.356.911	-0,14401	773.806.956.330	901.909.489.240	-0,15319	1	-0,1532	-0,10
276	2018	TRIS	1.309.700.828.591	740.398.335.250	0,57037	1.396.784.128.139	773.806.956.330	0,59061	0	0,0000	0,53
277	2019	TRIS	1.386.145.772.569	1.309.700.828.591	0,05673	1.478.735.205.373	1.396.784.128.139	0,05701	0	0,0000	0,05
278	2020	TRIS	1.107.116.051.142	1.386.145.772.569	-0,22477	1.141.269.765.789	1.478.735.205.373	-0,25905	1	-0,2590	-0,13
279	2021	TRIS	1.054.000.961.748	1.107.116.051.142	-0,04917	1.098.352.842.355	1.141.269.765.789	-0,03833	1	-0,0383	-0,05
280	2022	TRIS	1.390.298.895.404	1.054.000.961.748	0,27693	1.498.011.822.265	1.098.352.842.355	0,31033	0	0,0000	0,25
	2012	TRST	1.846.306.469.263	-	-	1.949.153.201.410	-	-	-	-	-

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281	2013	TRST	1.913.705.274.860	1.846.306.469.263	0,03585	2.033.149.367.039	1.949.153.201.410	0,04219	0	0,0000	0,06
282	2014	TRST	2.431.762.539.472	1.913.705.274.860	0,23958	2.507.884.797.367	2.033.149.367.039	0,20985	0	0,0000	0,26
283	2015	TRST	2.389.142.325.424	2.431.762.539.472	-0,01768	2.457.349.444.991	2.507.884.797.367	-0,02036	1	-0,0204	-0,01
284	2016	TRST	2.194.668.295.671	2.389.142.325.424	-0,08490	2.249.418.846.803	2.457.349.444.991	-0,08841	1	-0,0884	-0,07
285	2017	TRST	2.302.911.421.304	2.194.668.295.671	0,04814	2.354.938.016.436	2.249.418.846.803	0,04584	0	0,0000	0,05
286	2018	TRST	2.553.154.961.168	2.302.911.421.304	0,10316	2.630.918.557.954	2.354.938.016.436	0,11082	0	0,0000	0,10
287	2019	TRST	2.511.517.672.314	2.553.154.961.168	-0,01644	2.566.094.747.992	2.630.918.557.954	-0,02495	1	-0,0249	-0,03
288	2020	TRST	2.821.931.463.083	2.511.517.672.314	0,11653	2.991.912.117.541	2.566.094.747.992	0,15353	0	0,0000	0,08
289	2021	TRST	3.406.542.033.369	2.821.931.463.083	0,18828	3.652.442.192.823	2.991.912.117.541	0,19948	0	0,0000	0,18
290	2022	TRST	3.623.598.000.000	3.406.542.033.369	0,06177	3.819.385.000.000	3.652.442.192.823	0,04469	0	0,0000	0,08
	2012	TSPC	5.929.003.191.243	-	-	6.630.809.553.343	-	-	-	-	-
291	2013	TSPC	6.206.904.674.635	5.929.003.191.243	0,04581	6.854.889.233.121	6.630.809.553.343	0,03324	0	0,0000	0,07

No.	Year	Code	SG&A and COGS year t	SG&A and COGS year t-1	Ln SG&A and COGS	Net Sales year t	Net Sales Year t-1	Ln Sales	DEC (1: decrease, 0: increase)	$\beta_2 DEC_{l,t} \times \Delta lnSALES_{l,t}$	Cost Stickiness
292	2014	TSPC	6.880.276.142.689	6.206.904.674.635	0,10300	7.512.115.037.587	6.854.889.233.121	0,09155	0	0,0000	0,12
293	2015	TSPC	7.527.850.425.794	6.880.276.142.689	0,08995	8.181.481.867.179	7.512.115.037.587	0,08536	0	0,0000	0,08
294	2016	TSPC	8.493.389.478.314	7.527.850.425.794	0,12068	9.138.238.993.842	8.181.481.867.179	0,11059	0	0,0000	0,11
295	2017	TSPC	8.943.016.888.789	8.493.389.478.314	0,05158	9.565.462.045.199	9.138.238.993.842	0,04569	0	0,0000	0,06
296	2018	TSPC	9.443.258.390.811	8.943.016.888.789	0,05443	10.088.118.830.780	9.565.462.045.199	0,05320	0	0,0000	0,06
297	2019	TSPC	10.162.643.842.615	9.443.258.390.811	0,07342	10.993.842.057.747	10.088.118.830.780	0,08598	0	0,0000	0,06
298	2020	TSPC	9.854.551.157.881	10.162.643.842.615	-0,03079	10.968.402.090.246	10.993.842.057.747	-0,00232	1	-0,0023	-0,04
299	2021	TSPC	10.147.920.472.303	9.854.551.157.881	0,02934	11.234.443.003.639	10.968.402.090.246	0,02397	0	0,0000	0,01
300	2022	TSPC	11.576.485.605.793	10.147.920.472.303	0,13171	12.254.369.318.120	11.234.443.003.639	0,08690	0	0,0000	0,13
	2012	ULTJ	2.357.217.303.468	-	-	2.809.851.307.439	-	-	-	-	-
301	2013	ULTJ	2.997.603.121.836	2.357.217.303.468	0,24033	3.460.231.249.075	2.809.851.307.439	0,20820	0	0,0000	0,23
302	2014	ULTJ	3.589.875.129.247	2.997.603.121.836	0,18030	3.916.789.366.423	3.460.231.249.075	0,12394	0	0,0000	0,20
303	2015	ULTJ	3.741.294.139.014	3.589.875.129.247	0,04131	4.393.932.684.171	3.916.789.366.423	0,11495	0	0,0000	0,03

No.	Year	Code	SG&A and COGS year t	SG&A and COGS year t-1	Ln SG&A and COGS	Net Sales year t	Net Sales Year t-1	Ln Sales	DEC (1: decrease, 0: increase)	$\beta_2 DEC_{l,t} \times \Delta lnSALES_{l,t}$	Cost Stickiness
304	2016	ULTJ	3.824.019.787.528	3.741.294.139.014	0,02187	4.685.987.917.355	4.393.932.684.171	0,06435	0	0,0000	0,01
305	2017	ULTJ	3.905.787.000.000	3.824.019.787.528	0,02116	4.879.559.000.000	4.685.987.917.355	0,04048	0	0,0000	0,02
306	2018	ULTJ	4.568.864.000.000	3.905.787.000.000	0,15681	5.472.882.000.000	4.879.559.000.000	0,11475	0	0,0000	0,15
307	2019	ULTJ	4.974.449.000.000	4.568.864.000.000	0,08505	6.223.057.000.000	5.472.882.000.000	0,12846	0	0,0000	0,07
308	2020	ULTJ	4.743.769.000.000	4.974.449.000.000	-0,04748	5.967.362.000.000	6.223.057.000.000	-0,04196	1	-0,0420	-0,05
309	2021	ULTJ	5.200.407.000.000	4.743.769.000.000	0,09190	6.616.642.000.000	5.967.362.000.000	0,10328	0	0,0000	0,08
310	2022	ULTJ	6.384.755.000.000	5.200.407.000.000	0,20518	7.656.252.000.000	6.616.642.000.000	0,14593	0	0,0000	0,19
	2012	UNVR	20.848.440.000.000	-	-	27.303.248.000.000	-	-	-	-	-
311	2013	UNVR	23.635.692.000.000	20.848.440.000.000	0,12548	30.757.435.000.000	27.303.248.000.000	0,11913	0	0,0000	0,13
312	2014	UNVR	26.481.297.000.000	23.635.692.000.000	0,11368	34.511.534.000.000	30.757.435.000.000	0,11516	0	0,0000	0,13
313	2015	UNVR	28.540.150.000.000	26.481.297.000.000	0,07487	36.484.030.000.000	34.511.534.000.000	0,05558	0	0,0000	0,06
314	2016	UNVR	31.347.022.000.000	28.540.150.000.000	0,09381	40.053.732.000.000	36.484.030.000.000	0,09335	0	0,0000	0,08
315	2017	UNVR	31.699.534.000.000	31.347.022.000.000	0,01118	41.204.510.000.000	40.053.732.000.000	0,02833	0	0,0000	0,01

No.	Year	Code	SG&A and COGS year t	SG&A and COGS year t-1	Ln SG&A and COGS	Net Sales year t	Net Sales Year t-1	Ln Sales	DEC (1: decrease, 0: increase)	$\beta_2 DEC_{l,t} \times \Delta lnSALES_{l,t}$	Cost Stickiness
316	2018	UNVR	32.300.478.000.000	31.699.534.000.000	0,01878	41.802.073.000.000	41.204.510.000.000	0,01440	0	0,0000	0,03
317	2019	UNVR	32.804.739.000.000	32.300.478.000.000	0,01549	42.922.563.000.000	41.802.073.000.000	0,02645	0	0,0000	0,01
318	2020	UNVR	33.501.340.000.000	32.804.739.000.000	0,02101	42.972.474.000.000	42.922.563.000.000	0,00116	0	0,0000	0,00
319	2021	UNVR	31.868.036.000.000	33.501.340.000.000	-0,04998	39.545.959.000.000	42.972.474.000.000	-0,08310	1	-0,0831	-0,02
320	2022	UNVR	34.149.100.000.000	31.868.036.000.000	0,06913	41.218.881.000.000	39.545.959.000.000	0,04143	0	0,0000	0,08
	2012	WIIM	1.003.715.094.209	-	-	1.119.062.225.729	-	-	-	-	-
321	2013	WIIM	1.407.821.035.772	1.003.715.094.209	0,33833	1.588.022.200.150	1.119.062.225.729	0,35000	0	0,0000	0,31
322	2014	WIIM	1.498.753.671.937	1.407.821.035.772	0,06259	1.661.533.200.316	1.588.022.200.150	0,04525	0	0,0000	0,08
323	2015	WIIM	1.638.699.363.290	1.498.753.671.937	0,08927	1.839.419.574.956	1.661.533.200.316	0,10171	0	0,0000	0,08
324	2016	WIIM	1.551.411.839.555	1.638.699.363.290	-0,05474	1.685.795.530.617	1.839.419.574.956	-0,08721	1	-0,0872	-0,03
325	2017	WIIM	1.432.254.547.791	1.551.411.839.555	-0,07992	1.476.427.090.781	1.685.795.530.617	-0,13261	1	-0,1326	-0,04
326	2018	WIIM	1.353.197.875.286	1.432.254.547.791	-0,05678	1.405.384.153.405	1.476.427.090.781	-0,04931	1	-0,0493	-0,06

No.	Year	Code	SG&A and COGS year t	SG&A and COGS year t-1	Ln SG&A and COGS	Net Sales year t	Net Sales Year t-1	Ln Sales	DEC (1: decrease, 0: increase)	$\beta_2 DEC_{l,t} \times \Delta lnSALES_{l,t}$	Cost Stickiness
327	2019	WIIM	1.364.925.859.699	1.353.197.875.286	0,00863	1.393.574.099.760	1.405.384.153.405	-0,00844	1	-0,0084	0,01
328	2020	WIIM	1.789.195.950.294	1.364.925.859.699	0,27067	1.994.066.771.177	1.393.574.099.760	0,35830	0	0,0000	0,21
329	2021	WIIM	2.532.318.002.324	1.789.195.950.294	0,34737	2.733.691.702.981	1.994.066.771.177	0,31548	0	0,0000	0,35
330	2022	WIIM	3.398.468.656.547	2.532.318.002.324	0,29419	3.704.350.294.106	2.733.691.702.981	0,30385	0	0,0000	0,27

Appendix 3: Variable Measurement Comparison Results

1. **Cost Stickiness**

Coefficients	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
B_0	0,027	0,012	-0,008	-0,012	0,002
β_1	0,840	1,017	0,962	0,988	1,034
β_2	1,092	-0,442	-0,526	-0,454	-0,316

Coefficients	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
B_0	0,009	-0,0002	-0,019	-0,016	0,025
β_1	0,917	0,837	0,832	1,040	0,823
β_2	0,416	0,159	-0,283	-0,548	0,040

Appendix 4: Data Analysis Before Outliers are Carried Out

1. Descriptive Statistical Analysis

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Tax Avoidance	330	-5,73	-,01	-,3637	,48675
Product Market Competition	330	-,15	,31	,0000	,08462
Business Strategy	330	,00	1,00	,3576	,48001
Cost Stickiness	330	-,34	,91	,0902	,12199
Valid N (listwise)	330				

2. Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		330
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	,12014093
Most Extreme Differences	Absolute	,074
	Positive	,074
	Negative	-,054
Test Statistic		,074
Asymp. Sig. (2-tailed)		,000[c]

3. Multicollinearity Test

Coefficients[a]			
		Collinearity Statistics	
Model		Tolerance	VIF
1	(Constant)		
	Tax Avoidance	,982	1,018
	Product Market Competition	,988	1,012
	Business Strategy	,994	1,006
a. Dependent Variable: Cost Stickiness			

4. Heteroscedasticity Test

Coefficients[a]			
Model		t	Sig.
1	(Constant)	11,064	,000
	Tax Avoidance	-1,790	,074
	Product Market Competition	-,089	,929
	Business Strategy	,798	,426
a. Dependent Variable: Cost Stickiness			

Scatterplot
Dependent Variable: Cost Stickiness
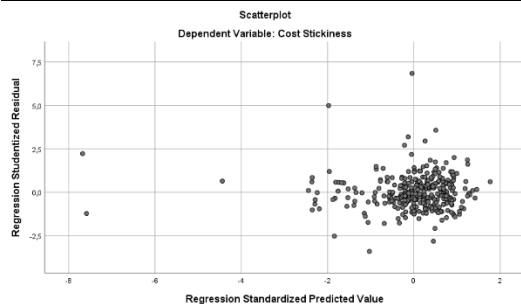
5. Autocorrelation Test

Coefficientsᵃ

Model		t	Sig.
1	(Constant)	,011	,991
	Tax Avoidance	,022	,982
	Product Market Competition	,035	,972
	Business Strategy Prospector	-,046	,963
	LAG_RES1	,827	,409
a. Dependent Variable: Unstandardized Residual			

6. Model Feasibility Test (Uji F)

ANOVAᵃ

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,144	2	,072	4,945	,008ᵇ
	Residual	4,752	327	,015		
	Total	4,896	329			
a. Dependent Variable: Cost Stickiness						
b. Predictors: (Constant), Product Market Competition, Tax Avoidance						

ANOVAᵃ

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,071	3	,024	1,609	,187ᵇ
	Residual	4,824	326	,015		
	Total	4,896	329			
a. Dependent Variable: Cost Stickiness						
b. Predictors: (Constant), Interaction of Tax Avoidance and Business Strategy Prospector, Tax Avoidance, Business Strategy Prospector						

ANOVAᵃ

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,084	3	,028	1,902	,129ᵇ
	Residual	4,812	326	,015		
	Total	4,896	329			
a. Dependent Variable: Cost Stickiness						
b. Predictors: (Constant), Interaction of Product Market Competition and Business Strategy Defender, Business Strategy Defender, Product Market Competition						

7. Coefficient of Determination Test (R^2)

Model Summaryᵇ

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,171ᵃ	,029	,023	,12055	1,898
a. Predictors: (Constant), Product Market Competition, Tax Avoidance					
b. Dependent Variable: Cost Stickiness					

Model Summaryᵇ

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,121ᵃ	,015	,006	,12165	1,863

a. Predictors: (Constant), Interaction of Tax Avoidance and Business Strategy Prospector, Tax Avoidance, Business Strategy Prospector
b. Dependent Variable: Cost Stickiness

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,131[a]	,017	,008	,12149	1,889
a. Predictors: (Constant), Interaction of Product Market Competition and Business Strategy Defender, Business Strategy Defender, Product Market Competition					
b. Dependent Variable: Cost Stickiness					

8. Hypothesis Test (Uji t)

Coefficients[a]					
	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	,102	,008		12,294	,000
Tax Avoidance	,033	,014	,131	2,395	,017
Product Market Competition	-,181	,079	-,125	-2,285	,023
a. Dependent Variable: Cost Stickiness					

Coefficients[a]					
	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	,104	,010		10,287	,000
Tax Avoidance	,031	,014	,123	2,148	,032
Business Strategy Prospector	-,010	,022	-,039	-,459	,646
Interaction of Tax Avoidance and Business Strategy Prospector	-,012	,052	-,020	-,236	,814
a. Dependent Variable: Cost Stickiness					

Coefficients[a]					
	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	,087	,011		7,805	,000
Product Market Competition	-,283	,127	-,197	-2,228	,027
Business Strategy Defender	,004	,014	,017	,306	,760
Interaction of Product Market Competition and Business Strategy Defender	,201	,163	,109	1,236	,218
a. Dependent Variable: Cost Stickiness					