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The Certification process of the Sustainability of the Business Model of Tyres Shop

Economic and Financial Analysis of the Italian Market and Identification of Management Priorities

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To anyone brave enough to steer his life
towards new horizons.

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Introduction

Abstract

The market of interest is the automotive industry and in particular the segment about the independent aftermarket of tyres and all activities performed by the retailers all over Italy. This project could be seen as the second chapter of greater project started many years ago by the professor Guelfi with the aim to make aware all the actors involved in the Italian Automotive Aftermarket about the sustainability of their competitive advantage over time, and to give a deeper understanding if their own business is performed in the right way. Right now, tyres shops operate on their own way, without any kind of reference. This means that it does not exist any kind of model or standard, recognized by a national entity, to look at, in order to determine if the way of working is creating value in the long term and so if it could be considered sustainable over time.

The "first chapter" of this project was focused on car body shops, in a first moment in Piedmont and then it was extended all over Italy reaching a well-recognized success, this "second chapter" is directly extended to the entire Italy with the aim to create a real document, recognized by regulatory authorities, through which tyres shops can realize if their way of operating is the right one, and if their competitive advantage is sustainable over time, especially in the long term.

In few words, the final goal was, and is, to give answers about the concrete value creation over time, analysing parameters and extrapolating several Key Performance Indicators (KPIs) to the huge number of small-medium-big entrepreneurs involved in this market.

National Authorities

Before going on in our discussion it is useful to make clearer the role of the National Regulatory Authorities, they are the ones that have the power to recognize the **legitimacy** of the certification provided to the tyres shop, and its validity over the national territory.

As first stage of the project, the Professor and his team had meetings with the Italian Economic Development Ministry (IEDM), which is the national entity responsible of the recognition and validity of any kind of business industry, intellectual property, and to

protect the firms know-how in terms of marks and patents; and with Accredia, which is the National Accreditation Body, designated by the Italian Government, to guarantee competence, independence and impartiality of certification, inspection and testing organizations. During these meetings, Professor Guelfi presented its proposal which was easily accepted, thanks to the great expectations on this project.

The market

The Automotive Aftermarket is the secondary market of the automotive industry, it is concerned in manufacturing, remanufacturing, distribution, retailing and installation of all vehicles spare parts, equipment, and accessories after the sale of the car by the original manufacturer (OEM) to the customer. The products could be divided into two macro categories:

1. Original: are the products produced directly by the carmaker or by an its supplier, MOPAR is the real producer of the brakes for FCA, so a MOPAR's brake is sold as original (Figure 1).
2. Compatible: are the products that are produced by third parties based on reverse engineering of the original products, like brakes produced by Brembo (Figure2).

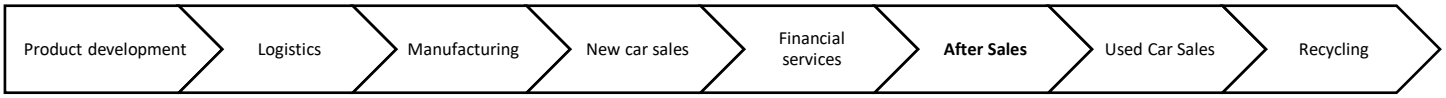


Figure 1 Value chain of automotive market

Figure 2 Value chain of after sales

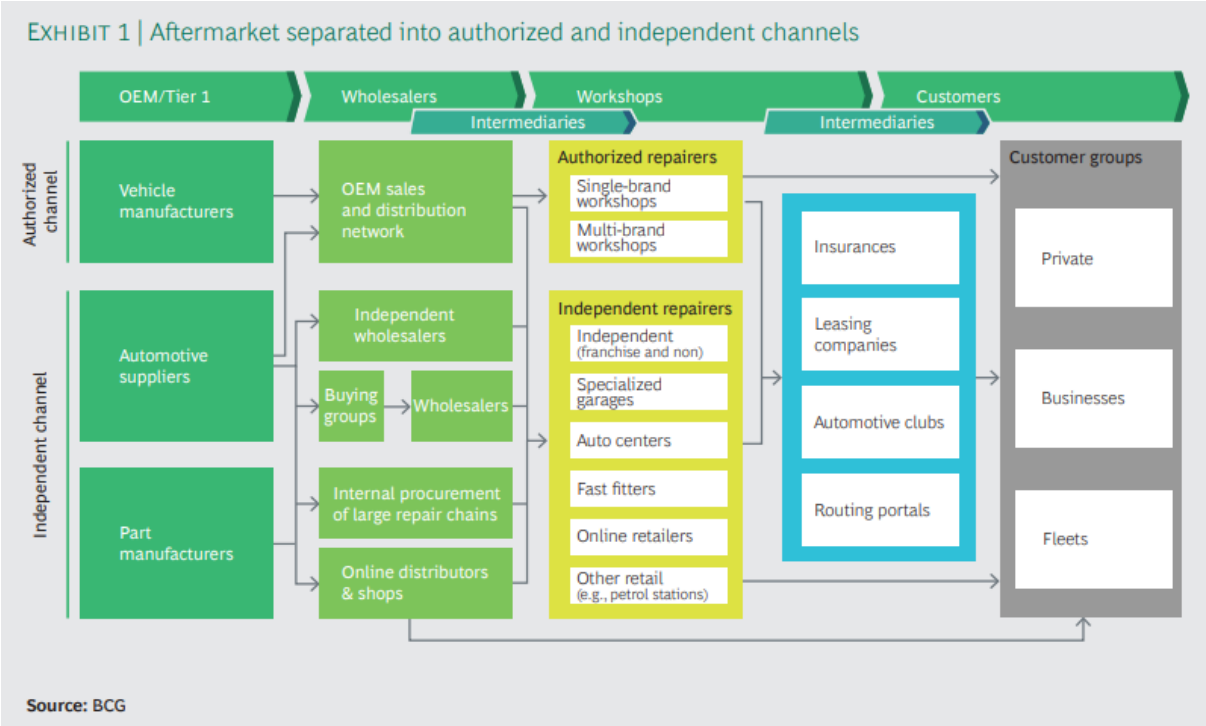


Figure 3 Channels of competition

Competition in the Italian Aftermarket auto parts business occurs across two channels: the authorized channel and the independent aftermarket, or IAM (Figure 3). The authorized channel includes automakers, or OEMs, and their affiliated repair shops. The independent aftermarket is made up of repairers without contractual ties to one carmaker, they provide equipment and services across multiple-compatible brands. Suppliers in this market rely on wholesale distributors to deliver all needed items to repair shops. Most of the distributors are part of organizations that function primarily as buying groups, referred to as international trading groups (ITGs). They allow distributors to group together to negotiate volume purchasing discounts from suppliers.

How the analysis process is carried out

Before going deeper in the details of how the analysis is carried out, it is useful to describe and explain some important and recurrent concepts, to be sure that aim of this project is easily understandable by the readers.

What is a Process

The definition of “process” could be vary depending on the context in which it is used, for our purpose we can refer to the following definition:

“A process is a sequence of events, actions, or activities, which, starting with an input, add value to this input and provide an output to an internal or external client, using the organization’s resources.”

Within a process all the actions are intercorrelated each other because, thinking in linear terms, each activity generates an output, which is the input of the following activity, until the wondered output is reached, so the process end (Figure 4).

In our case, the process is identified by all the sequential actions that a tyres seller must exercise from the moment a client comes in asking for a specific job, till the end of that job, when the car is given back to the client.

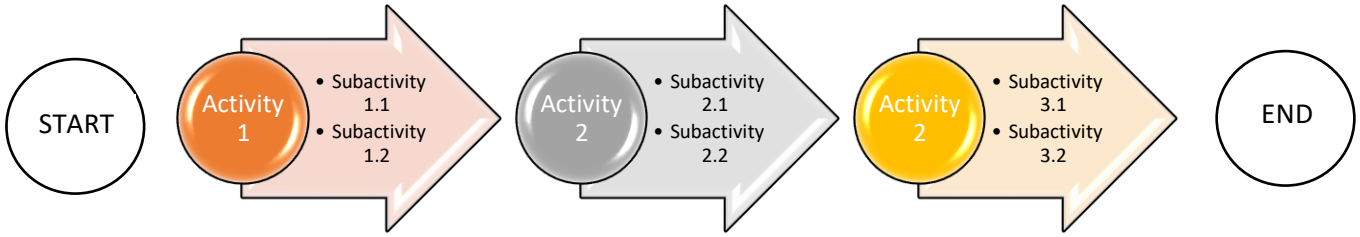


Figure 4 Schematic representation of a Linear process

What is a Certificated Analysis

Certificate something means “declare of having jurisdiction of the matter”, so a certification of the truthfulness of a fact, a document, or a declaration is something which has a legal value. A certificated report is a particular form of report in which the writer states that everything reported is true: he assumes the responsibility for the truthfulness of what is communicated and, consequently, he is also legally liable for any false material or ideological in the report.

A certificated technical report, must contain information that are necessary to give legitimacy to the certification itself:

- The details of the writer, including especially the id number of the professional registers to which he belongs to.

- Declaration of assumption of responsibility by the writer, with consequent awareness of the legal liabilities to which he is exposed in the case of proved falsity of what is reported.
- Date
- Signature

Once all these requirements are fulfilled, is possible to release a certificated analysis.

It is useful to remind that the certification process for the sustainability of the business model of a tyres shop is the final goal to be achieved, so the first fundamental step to build the procedural guidelines of this model (described in the following).

Tyres shop

A tyres seller/repairman is the person who has the knowledge, the ability, and the equipment necessary to provide new tyres, calibrate the wheels, fix possible damages, and other tasks related to the world of tyres.

When a client comes to a tyres seller shop, firstly the employee has to make a diagnosis of what happened to the tyre(s), trying to identify if it is the case of change the tyre(s) using a new one(s) or try to repair it (them), and then perform all actions required to assure a safe driving of the car. At the same time, he has to an estimate, based on the time and labour required, the costs and presents them to the client.

The aim is to restore the automobile to safe and efficient road holding conditions. The tasks normally performed in a tyres shop are:

- ***Balancing***: balancing the tyres (statically and/or dynamically) is required to assure that the rotation of the rim is homogeneous with the one of the tyres. It is carried out by fixing counterweights both on the inner and outer side of the rim, the car is analysed using a machinery that checks the imbalance between the rotation axis and the mass of the tyre, if any imbalance is found it is corrected by applying self-adhesive counterweights that bring the axis rotation perfectly aligned with the road.
- ***Inflation***: it could be performed using the normal compressed air or the nitrogen gas. This latter one is an alternative procedure to the traditional one, using

compressed air, particularly suitable when high performances are required from the tyres, in the past this gas was specifically used in Formula One and Aerospace industry. Nitrogen inflation is particularly recommended during the summer, as it improves the ability of the tyre to cool and maintain a constant temperature, which is essential to ensure good performance and high safety. During the hottest season, tyres are normally stressed by a very strong thermal excursion because of friction with the asphalt surface. With nitrogen, the internal surfaces do not exceed a warning thermal level, so the risk of breakage or bursting drops drastically. For the same reason, nitrogen inflation is not recommended during winter, when this gas would make the tires too cold.

- ***Inversion***: it allows to overcome the differences in wear created among the four tyres due to the traction and weight distribution of the car, which both are not uniform. The first element that can indicate the need to invert the tyres is the wear and especially its irregularity. For example, on a car with a front-wheels powertrain it will be possible to easily find a greater wear of the front tyres, whereas in car with back-wheels powertrain it is the opposite. The inversion should be done at regular intervals, from the very beginning of the car's life, to prevent these differences. Furthermore, this operation extends the life of the tyres and improves fuel consumption.
- ***Convergence***: The wheels of the cars are not settled perfectly perpendicular to the road, but according to certain angles, which are decided by the manufacturer. Repeated bumps against the asphalt or other unforeseen events can compromise these values, which must be reset in the tyres shop to ensure a comfortable and safe drive.
- ***Complete Trim***: as early said a car to easily maintain the wanted trajectories needs that the wheels are not perfectly perpendicular to the ground, but that on the contrary they are settled in their seats respecting a complex angle (in different directions) defined by the manufacturer (called “characteristic angles”), the set of these angles and the adjustments of the structures that connect the wheels to the car (the suspension) is called "trim". It is very important that this element of a car is subject to careful maintenance and periodical checks.

Sustainability

The economic-financial sustainability could be defined as the creation of value and profit today taking into account possible future needs, being sustainable, therefore, implies developing economic-financial strategies which allow to generate profit over time (long term perspective), without forgetting the environment and the society where the business is carried out.

Focusing on our project, the creation of sustainability of an ideal tyres shop is carried out through several studies and information made on the determination of the different activities performed by the firms.

All the information collected from a technical working group are transformed in numbers, ratios and KPIs (following section), to give an analytic interpretation to the results obtained. Information is collected using a descriptive way and through private and public documents and then converted in numbers, in accordance with the statements of the experts of the profession, to give a more reliable and real interpretation of these data translation.

The aim is to create a value scale, ranging from 1 (low) to 10 (high), in which each value is linked to a range of the KPIs (reported as percentages) and to show the status of the firm in relation with these kinds of parameters.

VAR_1/VAR_2	0% - 10%	11% - 12%	13% - 14%	15% - 16%	17% - 18%	19% - 20%	21% - 22%	23% - 24%	25% - 26%	27% - 28%	Standard ≥ 29%
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
Score	0	1	2	3	4	5	6	7	8	9	10

Table 1 Value Scale

Thus, for a firm “the goal” to achieve is reach the highest positions in these scales, because in such a way the possibility to be sustainable over time is much more grounded and concrete.

Once all the results have been elaborated and given as outputs, it will be possible to state if that business has the terms and details to be declared as sustainable and it will be, also, possible to rank the firms which chose this model of certified analysis.

The table above is an example of how the value for the analysis and then for the ranking are given.

Every time it is decided to create a KPI, the percentages obtained are translated into a value ranging from 1 (low) to 10 (high), in order to simplify the analysis and the ranking. All the tables are built following this structure:

- In the up-left corner there is the description of the variables under analysis (VAR_1 and VAR_2) and how the KPI is obtained.
- In the last row are shown the scores that determine the scale of classification.
- In the middle rows, the results obtained by the calculation of the KPI are linked to the relative score.
- The last column shows the ideal value of each KPI, it is called 'standard'. These values were found by the technical working group, and it was assigned the best score (10), then intervals for assigning lower values were established, with the relative lower scores.

Having an example: supposing to take into account two different variables and the relative KPI obtained. The two variables might be "absolute" values or evaluations through algebraic operations or combination with other variables. Once obtained the KPI of interest and so identified a "precise activity" to which the KPI is referring to, a score is associated to that KPI, depending on the scores scale.

If the ratio gives as a result 15.5%, referring to the previous table, the assigned score is 3 out of 10, which is not a good result this shows that for that precise activity the firm is not operating well, and its value creation may be affected by the low efficiency in performing this task. This could be a way to understand which are the strengths and weaknesses of each business, and so a way to identify which are the activities that should be corrected and improved, to allow a growing profitability and the sustainability of the business model over time.

The process of collecting information

To start this section, it is really useful to remember that this project represents the "second chapter" of a huger project of research, so quite half of the job is to readapt and fix what

was done for the “first chapter” (the car shops) to our market of interest. Thanks to a huge effort, a detailed study and network based on the good reputation of the research team, a growing sample of tyres shops are working to adapt the disciplinary already written by Professor and his team, making it considerable, acceptable, and valid to be approved by Accredia and IEDM. The final goal is to spread all over the country also this disciplinary.

This section will provide the path followed in this project, giving information regarding:

- the way with which the information regarding each phase of the processes performed within the tyres shop have been collected and how the operations are executed.
- who has the capability and is in charge to perform these activities.
- which is the *modus-operandi* of the tyres shop.

Firstly, the main aspect that is essential to highlight is that the structure of this project and its management comes from a carefully data collection and analysis done by the Professor Guelfi and his team. However, the information collected, the specific sequence of the tasks and the associated operators, the flow of activities of the business, the technical terms have been elaborated thanks to the support and suggestions of the GTW, who gave the guidelines and references to elaborate an appropriate document.

Secondly, when running a business is fundamental to clearly assess who do what, and who oversees each performing task, consequently, is possible to definitely be aware of which role is linked to the corresponding task(s), in order to have evidence of the progress status of each practice and, if needed, to understand who is eventually liable in case of mistakes or errors.

When working within a tyres shop, it is possible to meet different “types” of people working on the same practice, depending on the fact that different group of workers perform different tasks.

The roles that are possible to identify within a tyres shop are:

- ***Business Owner****:* he is the who generally founded and opened the shop, he acts as a supervisor of all activities, taking care that everything is performed in the most

possible correct way, remembering that any client should be satisfied as best as possible. He, also, accomplish to very high-level business choses.

- ***Department Supervisor**:* he is a skilled technician or an expert, and he is in charge of acting as coordinator and supervisor in his competence area. He is subordinated to the business owner.
- ***Receptionist**:* he is the employee in charge of receiving the incoming clients, asking all the data needed to activate the practice.
- ***Secretary**:* the employee in charge of managing all the administrative aspects of the business, taking, especially, care of the cash inflows and outflows.
- ***Warehouse Employee**:* he is who oversees orders needed to fulfil customer's requests, he is charge of selecting the specific and right tyre type or spare parts required. He is, also, in charge of managing the logistics related to the "stock service" offered to the client.
- ***Trainee**:* there, sometimes, be a person who is learning how to work in a tyre shop, making experience and helping other workers.
- ***Purchase Manager**:* he is the employee in charge of buying all is needed to perform the activities within the tyres shop.
- ***Tyre Worker**:* he is the employee which directly work on the tyres. He is in charge of assembling, disassembling, balancing, and convergence.
- ***Specialized Worker**:* he is a mechatronic skilled worker; he is usually in charge of the pre and post check to car.

Once having identified the main tasks carried out in tyres shop in a broad manner, the contents of work are clear, but there is not yet a precise order to follow, this latter aspect is the next step of the analysis, the information collected were organized in order to create and show a well-structured flow of actions performed within the tyres shop.

First of all, it was highlighted that different customers require different way of working, so it was fundamental to identify the entire set of customers that the firm could serve.

First analysed scenario was the case of a common private customer, so a common person which comes in a tyres shop asking for a service. One of the most common services is the season change of the tyres, especially just before the first half of the November, when many motorist are obliged to use winter tyres, but there are other many possible reasons

for which a common client needs to came in tyres shop, as previously highlighted, like the *Inversion* of the tyres themselves, or the *Inflation,* but also the restoration of the Convergence, maybe just after a little car crash, in order to not incur in more serious problems like a difficult driving of the car. Another common reasons of why a normal driver comes in a tyres shop is the need of buy new tyres and replace the old one.

Once all type of customers and all possible way of performing a given work were clearly identified, we tried to collect more several information for all of them, with the goal of creating parameters and, so, giving a measurable value, which finally allow to determine the KPI of interest.

Especially for each activities performed we wanted to know:

- ***Organization Position***: the employee of the tyres shop which is charge of performing the task.
- ***Competences***: the entire set of knowledges that employee of the former point must have to well perform the task. We distinguished two types of competences:
    - ***Formal***: certification, licenses, titles and so on.
    - ***Substantial***: Experience, well proved abilities and capabilities.
- ***Output***: the entire set of information, documents, semifinished and finished goods that are normally generated as output of the task. This point matters a lot, because must be reported to client the work done and how the task itself is creating value.
- ***Input***: the entire set of information, documents, semifinished goods and used resources necessary to well perform the task. This gives, also, information about the entire process: if the input is at the same time the output of an upward task, this means that the process is still carrying over and we are analysing a middle path task; whereas, if the input comes directly from the interaction with the client, we are analysing the beginning of the process.
- ***Client***: as previously said, depending on the customer the same task could be performed in different ways, so recognize the client is fundamental to correctly evaluate the task. Recognize the client has, also, an organizational meaning: the client of a specific task is the recipient of the output produced. An organizational client could be internal (another or the same employee of the tyres shop) or external (who is generally labelled as client or a person external to the tyres shop).

The template used to collect this information is shown in the table 2:

Customer Type	Competences		Output	Input & Resources	Client Type	
Organizational position	Formal	Substantial	Information, Document, semi/finished, etc.	Time, Tools, Spaces, Materials, etc.	Internal	External
⋮	⋮	⋮	⋮	⋮	⋮	⋮

Table 2 Template to Collect Information

To have a better understand how this table is used and how the information is collected and organized an example is shown in the following. It is related to the very first task performed in tyres shop when a private customer comes in "*Welcoming the client*" and "*Listening Client needs and asks"* (Table 3).

Customer Type	Competences		Output	Input & Resources	Client Type	
Organizational position	Formal	Substantial	Information, Document, semi/finished, etc.	Time, Tools, Spaces, Materials, etc.	Internal	External
Receptionist	No	Relational and Soft Skills. Experience in rough-cut evaluation of the work	Documentation and understanding of the work to be done asked by the customer. Staring the practice	Time and physical assets	Specialized employee to a more precise quote	

Table 3 Example of Collected Information

The key to read the table is the up-left cell, which clearly identifies the first classification of the customer. After that, it is showed that there is an employee who works as receptionist, and he is in charge of receiving the customer and listening to his requests. Then is showed that this employee does not have any particular or specific formal competences, but soft and relational skills are required to perform well this task. The receiving phase could represent a key indicator of professionalism, and for a customer it could be a rough discriminator when choosing among many tyres shop. As highlighted, this simple task has a huge impact on the entire business.

Moreover, it is showed that the “Welcoming” task is performed by an employee, so, as shown above, a kind of experience is required to deliver a correct rough evaluation of the work to be done and consequent price asked to the customer. This is a quite critical point, it is really hard to assess the experience of an employee because many aspects come in play, like the number of jobs performed or assisted, limiting this estimation to a time unit is not so correct, but, being agree with the GTW, it was decided that the minimum value to declare an employee as experienced one is five years.

Focusing a bit more on this aspect it was considered that five years is just enough time to have seen a many different dynamics and jobs in the sector and consequently, learn enough of how to move within it.

Proceeding with the analysis of the information provided by the table, the inputs and outputs of the task are showed. As input all the tangible and intangible resources should be included ranging from “time” to the physical room where the client enters. Include the intangible resources, especially time, is important because when a process must be improved one of the core aspects is always to reduce the time of each task in order to improve the efficiency.

Finally, for each task is vital to keep evidence of the output generated and to whom it is delivered, in the example analysed the output is delivered to a specialized worker, which can better evaluate the job required and so the price asked.

Operating Process

This section represents the moment in which all the previous ideas are translated in facts and actions. The operating process represents the ground phase of the implementation of our project because this is the moment when the project itself starts acquiring a concrete shape.

The first step to perform, as Latins said, is “Divide et Impera”, so the work is divided in different and quite stand-alone sub-activities, they will be elaborated separately and at the end of the process merged together.

As done for the “first chapter” of the project, the one related to the car body shop, it was decided to divide this deep analysis in three macro-areas:

- ***Organisational Quality***: this section focuses on the tasks performed within a tyres shop, trying to understand how each task should be carried out to assure the highest professional degree. This analysis is carried out taking into account that each task belongs to a specific path, so it is, also, important to identify the correct sequence of the tasks. The reliability of this analysis is assured only thanks to the support of the GTW, otherwise it was really hard to state that a sequence provides better results than another one. Clearly the macro-area of interest represents one of the most important players when certificate and rank of a company, this because the following economic and financial indicators are the results of the well organization in performing the job and how it is carried out.
- ***Economic and Financial Solidity***: this section focuses on all the economic and financial indicators and evaluations that the certification process requires. The majority of the information needed comes the balance sheet and the income statement, but also other financial documents are needed like the annual cash flow. In this section many KPIs are computed and based on them a prior evaluation of the company is made, immediately after the KPIs of each tyres shop are compared with the ones of the market (to assess the KPIs for the market a general merge of the data coming from all firms is made, generating a kind of big unique firm that we

called “Aggregated”, once the Aggregated is obtained, the KPIs are computed using the same way used to assess them for a classical tyres shop). It is through this section that the sustainability of business and the capability to generate profit over time in the long-term is assessed. The comparison between the KPIs from the firm with the ones of the market is most critical aspect of this section because it is through this comparison that emerge how the firm is carrying out its business, which should be the KPIs not aligned, and so the tasks and activities that should be improved or revised, in order to maximize the value generated, reaching the highest possible efficiency of the process.

- ***Degree of Compliance with the standards in force***: this section analyses and assess if the firm is compliant with all laws and standards of the belonged market. For any type of business, the fulfilment of the legal requirements is absolutely mandatory, this means that in case of any type of infringement, the firm reach an evaluation equal to zero in our certification process, and so it is not possible for the interested firm to be ranked and so obtain the certification of the sustainability of its business model. Maybe it could be useful to highlight that satisfy the legal requirements is a necessary, but not sufficient, condition to certificate and rank the business of the firm, indeed, if the legal prescriptions are violated, the business could be penally liable, and even if it has the maximum scores in the other two sections, this is not enough to obtain the certification.

  The aim of this section is to certify all legal requirements which must be satisfied and, as already done in the past, which are the good practices that are not mandatory, but they contribute to the value creation. This latter aspect is, also, taken into account when giving the final evaluation: a tyres shop will get more if also the good practices are fulfilled compared to the others that do not fulfil them.

Once divided and identified the main three sections of the project, the logical consequent problem is how to assess the impact of each section, this is translated into how to assign a weight to each. Finally, it was decided to assign the same weight to each section, especially because these three areas have fundamental to the certification process itself. Moreover, pursuing different weights in the certification process could be misleading for a certified company that reads the final report, because it is implicit suggested to focus more on the

section or area that has the heaviest weight, neglecting the others. The final weights assigned are the 33% (Table 4).

Table 4 Weights of each Section

Once reached this point, it is useful to remind to the lector that this thesis work will be specially focused on the Economic and Financial section of the certification process for a tyres shop. The first section related to the Organizational Quality is somewhat addressed in the introduction, whereas the last section could be developed as an independent thesis work.

KPIs

Abstract

This section provides the list of all KPIs used to analyse the businesses, in order to reach a global picture of the trends and values of our reference market, the independent aftermarket of spare parts and the job of the tyres shop in Italy. From this point and on, it will be analysed the Economic and Financial solidity of the firm, paying attention exclusively to the business of the world of tyres and their economic trend over time, on the base of data collected. To evaluate each business, it was necessary to obtain the internal balance sheet and all other possible documents that gave a picture of the actual situation. Publicly available documents were not enough detailed to the assess the certification, they are based on a standard reclassification that lose much information "along the road", resulting in a poor analysis, called "IV CEE Directive".

To build a strong consistent base to compute and then evaluate the KPIs for each firm, we asked the all data from the beginning (January) of 2018 to the end (December) of 2021, having a four years time-span allows to study the recent evolution of the tyres shop, so to better understand each business. We do not ask for the data of the last year 2022 because them are not yet consolidated, so quite difficult to analyse and interpret.

The number of tyres shop in Italy is quite hight, this is due to the peculiar granularity of the Italian market (this fact should be viewed from the entire industry system, the Italian industrial fabric is based on several small – medium firms and few big ones), so we decided to analyse just a part. Reached this point, two ways could be pursued:

- Try to reach and analyse the small-medium tyres shop, obviously just a fraction of them, and focus the entire project on this segment.
- Try to reach and analyse the smaller fraction of the big dealer of the market, also in this case just a fraction, and, in a first phase, focus only on this segment, and following extend the analysis and the results to the whole sector.

Finally, it was decided to pursue the second option, this decision was especially done due to the not trivial possibility to reach a high enough number of small-medium tyres shop,

which in turn gives the possibility to give coherence and consistency to the project. Being in smaller number made, for the aim of the project, more attractive the bigger tyres shops, then, once reached a high enough number of firms analysed, the possibility to extend an already accepted model to the smaller shops is in any case feasible.

Another aspect that suggested to bet on the big tyres shops was the fact that biggest majority of the small-medium firms (about the 80%) is registered to the Camera di Commercio as companies of physical person and not as separately legal entity like an S.R.L., this gives the right of privacy, so the financial end economic documents must not be published, keeping them within to the firm. On the other hand, the companies registered as legal entity are obliged to publish some Economic and Financial documents, as already said, in a kind of standardized way the IV CEE Directive, making available the data regarding the balance sheet, the income statement, and other important papers to everybody. As example of this last aspect, it is possible to get information about the composition of the membership and/or partnership from the Company Registration Paper edited by the Camera di Commercio, and so target the head chief of each business, without losing too much time climbing the hierarchical order of the firm. Moreover, from the published papers is possible to get the Value-Added Tax Identification Number (VAT Number), and so clearly and easily identify a firm when many holdings or agglomerates are present.

To discern among the many possible candidates, we created a list based on the Value of Production, targeting for the project the firms with the highest values, following a descent order, and keeping in mind to create a consistent sample of analysed firms.

As last step, before starting the analysis of each tyres shop, we needed to choose which KPIs must be computed. We created an excel file for each business starting from the VAT number and then we reclassified the Balance Sheet, the Income Statement and as consequence we defined the Cash Flow statement for each year on annual basis.

Going on into the technical aspects we identified six macro-sections, in the following is provided the list of the KPIs and then a deeper analysis of each:

- Economic KPIs
    - Value of Production

        - First Margin
        - Return on Equity
        - Gross Return on Assets
        - Return on Sales
        - Gross Assets Turnover
        - Operating Assets Turnover
        - Financial Leverage
        - Financial/Tax Incidence
        - Incidence of Financial Result
        - Net Income
- Asset KPIs
        - Liquidity Index
        - Days Sales Outstanding
        - Days Payable Outstanding
        - Net Financial Position
        - Financial Freedom Index
        - MLT Horizontal Financial Equilibrium
        - Contribution/Tax Regularity Index
- Financial KPIs
        - Net Financial Position Over Revenues Index
        - Time to Repay Financial Debts
        - Current Cash Flow
        - Surplus – Deficit to Revenues
- Productivity KPIs
        - Employed Work Force Productivity Index
        - Plant Productivity Index
        - Tyres Markup
- Elasticity KPIs
        - Breakeven Point
        - Assets Elasticity
        - Managerial Responsiveness Index
        - Operating Leverage Sensibility to Volume

- Operating Leverage Sensibility to Price
- Income to Self – Financing

Last reflection before starting with the KPIs is that all the computation showed are taken from the Aggregate in order to break the right of privacy of the tyres shop.

Value of Production

Value of production is the first index that should be calculated when evaluate a business, it is referred to the actual value of the good intended to the sale, especially the value that has been produced within the year, so it includes the production sold, the production ready but not already sold and the production intended to the internal use of the business. It is important to highlight that the Value of Production is not the Revenues Stream, which in turn is defined as the value of the goods that have been already sold and for which a related invoices have been issued. The VoP is equal to the Revenues plus the inventories of the current year production less the value of the inventory of past years production. Only in the case in which the entire production is sold, the VoP is equal to the Revenues.

When dealing with the Value of Production attention should be paid to the changing in the inventory, usually called ΔI. This is due to by the fact that, sometimes, it happens that only a fraction of the current year production is sold, and that fraction in excess is stored as Inventory; On the other hand, also the opposite case could happen, where during the concurrent year is sold more than current production, but also a part of the inventory. To take care of these two common cases, in the change of VoP is seldom used in the Income Statement the voice Change in Inventory or ΔI and kept the VoP equal to the Revenues. In our case it should be highlighted that the possibility of an internal customer, and so a production intended only for an internal use, is high, so a specific voice should be introduced, like Internal Production Value (IPV).

Thus, to compute from the Income Statement the Value of Production to the Revenues must be added the ΔI and the IPV, as follows:

$$VoP = \text{Revenues} + \Delta\text{I} + \Delta\text{IPV}$$

Where:

- ΔI is the change in Inventory of semifinished/finished goods.

- ΔIPV is the change of the Value for Internal Production.

A first observation must be made on the value of ΔI and ΔIPV that could be negative, depending on the cases previously mentioned. To concluding this reasoning it could be said that if a company presents a VoP systematically (so for many years) higher than Revenues and the Trend shows an increasing among the years under analysis, it could signal a problem in the production: the firm is a phase of overproduction which could be translated in a structural crisis and in a systematic accumulation of inventory, that is always harder and harder to sell among the years, so it is auspicial to keep the Value of Production as closer as possible to the Revenues.

Finally, to the scope of this project, the Value of production is compared firstly in absolute terms with the COGS, First Margin, Indirect Cost and Net Income, and then with the same KPIs but using percentages.

First Margin

This KPI measures the tyres shop's attitude to achieve substantial margin in the sale of its products/services, it shows the amount of profit made before deducting selling, general, and administrative costs, which is the firm's net profit margin. First Margin is obtained through the following ratio:

$$First\ Margin = \frac{Revenues - Cost\ of\ Goods\ Sold}{Revenues}\%$$

Going deeper in the analysis of that KPI, it is needed the definition of Cost of Goods Sold. To have a saleable product, a company needs raw material, utilities, and other resources. In terms of accounting practices, the accounts payable represents how much money the company owes to its suppliers for purchases made on credit. Additionally, there is a cost associated with the manufacturing of the saleable product, and it includes payment for utilities like electricity and for employee wages. All these kinds of costs are aggregated as Cost of Goods Sold (COGS), which is defined as the cost of acquiring or manufacturing the products that the firms sell:

$$COGS = \Delta I + P$$

Where:

- ΔI = Change in Inventory
- P = Purchases

In our analysis, when reclassifying the income statement, we directly computed the percentage of each voice reported to the total Revenues, as showed in the following table we computed this KPI when writing down the income statement itself (Table 5):

Income Statement	2021 [K€]	%
Total Revenues	5,283,795.0	100.0%
From sales of Tyres	2,508,388.5	47.5%
From sales of Tyres related Service	751,987.0	14.2%
From Deposits Account	97,367.0	1.8%
From Mechanical Operations	0.0	0.0%
From Car Windows	51,719.0	1.0%
From Car Inspection Centre	0.0	0.0%
From Other	1,874,333.5	35.5%
Cost of Goods Sold	-3,425,197.9	-64.8%
Change in Inventory	-152,946.2	-2.9%
Tyres Purchases	-2,499,340.3	-47.3%
Spare Parts and Consumables Purchases	-117,985.7	-2.2%
Windows Purchases	-13,447.0	-0.3%
Inspection Costs	-24,651.0	-0.5%
Other Purchases	-616,827.7	-11.7%
First Margin	1,858,597.1	35.2%

Table 5 First Margin Definition

Going back on gross profit margin analysis, its huge fluctuations may signal poor management practices and/or inferior products. On the other hand, such fluctuations may be justified in cases where a company is making a pivot, in which case temporary volatility should be no cause for alarm. GPM is widely used by analysts to compare different companies' business model.

Return On Equity

The real first KPI analysed is the return on equity (ROE) it measures the return of Net Assets in term of the Net Income. It should be the highest possible, the ideal situation is ROE > 9.9%:

$$ROE = \frac{Net\ Income}{Net\ Assets}$$

Before going on with the explanation of this KPI, as done for the Net Income, we must show how we found the value of the Net Assets using the table 6:

Balance Sheet	2021 [K€]
Net Assets	**1,134,145.9**
Share Capital	188,920.0
Reserves + Previous Years Profits	814,874.2
Net Income	130,351.7

Table 6 Net Assets Definition

ROE could be seen as an indicator of efficiency: how efficiently the net assets of the tyres shop generate value and profit. It does not have an ex-ante ideal value due to the peculiarities of each reference market, for the European tyres market, as already said, is 9.9%, value that came from the average of the ROE of most profitable firms.

It is important to highlight that an extremely high ROE is good if it is related to strong performance, but sometimes it could be a sign of high risk related to the firm.

Gross Return on Assets

The second KPI analysed is the Gross Return on Assets that is a measure of the return of the Operating Invested Capital in terms of Gross Operating Income, or Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA). The operating invested capital is computed without all financial activities and the gross operating income is figured out before taxes.

$$GROA = \frac{Gross\ Operating\ Income\ (EBITDA)}{Operating\ Assets}$$

The ideal value of is GROA > 10.0%, it could be seen as a performance indicator to determine how efficiently a firm uses its assets to generate profit.

As already done, in the following table is showed how the value of the Operating Assets is assessed, whereas the calculation related to the EBITDA is showed in the table related to the Net Income (Table 7):

Balance Sheet	2021 [K€]
Intangible Fixed Assets	634,358.8
Tangible Fixed Assets	2,034,698.7
Inventory	115,084.0
Credits from Clients	744,412.8
Other Operating Credits	152,731.9
Operating Assets	**3,681,286.2**

Table 7 Operating Assets Definition

It is useful to say something more about EBITDA, it is a way to evaluate the performance of the tyres shop firm, excluding the financial and fiscal conditions from the outcome. EBITDA is useful for comparing financial strength among different companies, based on a single return estimate, it could be used as a measure of Operating Income in the calculation of cash flows from Operating Activities. EBITDA is also applicable in several sectors, and it allows analysts to focus on the outcome of operational decisions and verify whether the company makes positive profits from ordinary operations. When performing EBITDA assessment method, it is worth checking other factors and performance indicators to ensure that the company does not want to spread misleading information.

Very often EBITDA is figured out starting from EBIT and going back on the Income Statement, adding depreciations and amortizations, but there is not a stone-rule on how to compute it.

Return On Sales

Return on sales is a measure of how the Gross Operating Result, or Earnings Before Interest and Taxes (EBIT), impacts on the Total Revenues, it is used to measure the tyres shop's operational efficiency providing insight into how much profit is being produced per euro of sales. An increasing ROS indicates that a company is improving efficiency, while a decreasing ROS could signal impending financial troubles.

$$ROS = \frac{Gross\ Operating\ Result\ (EBIT)}{Total\ Revenues}$$

To have a coherent analysis when using ROS as KPI, the different firms should be analysed at the same time, and, especially, they should have comparable sizes. This last requirement is not often taken into account due to the high heterogeneity of the market. The ideal value is ROS > 4.0%.

Gross Assets Turnover

Gross Asset Turnover is a KPI that measures the productivity of the Total Invested Capital, excluding financial activities, in terms of total Revenues. This KPI is quite similar to the previous one, the main difference lies in the fact this KPI includes the entire set of assets that are not used when performing the core activities. GAT gives a general overview on how effectively the tyres shop uses all its assets to produce value, sales or Revenues and it is usually computed on annual basis. As previously said for OAT, also for the GAT is required to have similar sizes of the firms to give coherence to the outcomes.

$$GAT = \frac{Total\ Revenues}{Total\ Assets}$$

GAT can be modified to analyse only the fixed assets of a company, following the same reasoning of the OAT, in our reference market the ideal value is GAT > 4.0.

Operating Assets Turnover

Operating Asset Turnover is a KPI that shows how the capability of tyres shop to generate Revenues in terms of the Operating Assets employed, especially highlighting how efficiently the firm is using these last mentioned. This KPI should be as higher as possible, signalling that the company is good in using the physical assets when generating profit.

$$OAT = \frac{Total\ Revenues}{Operating\ Assets}$$

The peculiarity of this parameter is that when performing the calculation, all assets which are not pertinent to the core operations are excluded, in doing so the information provided are only related to the assets used during the core process.

It is important to note, also for this KPI, that there is not the absolute or ideal target. This ratio should be analysed in relation to the reference market average.

Companies with a higher operating asset turnover ratio are more effective in using company assets to generate value, the ideal target, only in our reference market, is around OAT > 2.5.

Financial Leverage

Financial leverage (FL) is a KPI that measures the usage of Financial Debt to finance the business. FL is obtained through the ratio between the operating assets and net assets.

$$FL = \frac{Operating\ Assets}{Net\ Assets}$$

Debt must be used by a firm, but not too much, the ideal value is just above 2. Its importance is especially done by the use that banks have of this KPI, it is seen as the first insight of the possible risk related to the firm: uncontrolled debt levels can lead to credit downgrades or worse, but, on the other hand, too few debts can also raise questions: reluctance or inability to borrow may be a sign that operating margins are tight.

FinExtraFisc Incidence

FinExtraFisc is a KPI that measures the percentage of the gross operating income eroded by the financial, fiscal, and extraordinary management. It is computed through the ratio between the net income and the gross operating income:

$$FinExtraFisc = \frac{Net\ Income}{Gross\ Operating\ Result}\%$$

This ratio shows the amount of net profit that remains from operating income at the net of the interest expense, financial events, extraordinary occurrences, atypical management, and taxes. Assuming that taxes have a proportional impact, this index, under normal management conditions, in the absence of extraordinary and atypical management, is heavily influenced by the presence of interest expense, therefore often the worsening of this index is due to a higher debt with a consequent increase in financial charges.

From our analysis of the tyres shops market arose that the ideal value for this KPI is > 49%.

Incidence of Financial Result

Incidence of Financial Result is a KPI that measures the percentage of the total Revenues eroded by the Financial Passive Interests. It is computed through the ratio between the Financial Passive Interest and the Total Revenues:

$$Incidence\ of\ Financial\ Result = \frac{Financial\ Passive\ Interest}{Total\ Revenues}\%$$

This ratio shows how the cost of debt weight on the accounts of the tyres shop. A high percentage (more than 5%) signals that the tyres shop could have to face problems in the short terms, this is due to the implicit fact that when asking for a debt or a loan, the financial institutions make a preliminary analysis of the possible risk to lose their money. According to this analysis the financial institutions fix the interest that the debt asking firm (in our case the tyres shop) must pay, if this amount is high compared to the Total Revenues this signal high potential risk of failing.

Being a cost, it should be as low as possible, in our reference market the ideal value is FC < 1%.

Net Income

Net income is not a properly performance index, it comes from the income statement as the result, and it gives the first overview on how the tyres shop is going on or acting in the market. The aim of each firm is always to maximize this parameter due to its strictly linkage with the satisfaction of the owners of the business, finally it represents earnings.

Net income, by definition, is the overall profit that a company has been capable to realize at the net of any kind of cost. It is seen as a strategic data to evaluate the profitability of a company in a certain period. To figure it out, it is necessary to subtract all the costs and the expenditures, included interests owed to third parties and taxes, incurred from the total Revenues, what remains is the net earnings of the under-analysis period.

In the following tables is presented how we computed the Net Income (Table 8); it is important to show how we arrived at a specific result because this process is not completely standard.

Income Statement	2021 [K€]
Total Revenues	5,283,795.0
From sales of Tyres	2,508,388.5
From sales of Tyres related Service	751,987.0
From Deposits Account	97,367.0
From Mechanical Operations	0.0
From Car Windows	51,719.0
From Car Inspection Centre	0.0
From Other	1,874,333.5
Cost of Goods Sold	-3,425,197.9
Δ Inventory	-152,946.2
Tyres Purchases	-2,499,340.3
Spare Parts and Consumables Purchases	-117,985.7
Windows Purchases	-13,447.0
Inspection Costs	-24,651.0
Other Purchases	-616,827.7
First Margin	1,858,597.1
Structural Cost	-615,689.6
Passive Rent	-190,995.9
Consulting	-171,023.0
Utilities	-55,116.5
Bank Charges	-31,123.1
Other Operative Costs	-167,431.1
Added Value	1,242,907.5
Labour Cost	-988,843.6
of which Direct Labour Cost	-647,181.3
of which Advance on Severance Pay (DLC)	-21,458.4
of which Indirect Labour Cost	0.0
of which Advance on Severance Pay (ILC)	-13,048.0
of which Other Personnel Costs	-224,877.9
Third Working Operations	-13,510.1
Administration	-68,768.0
Gross Operating Income (EBITDA)	254,063.9
Depreciations / Provisions / Write-Dows	-50,304.0

of which Buildings Depreciation	-28,312.0
of which Technical Depreciation	-21,992.0
Gross Operating Result (EBIT)	203,759.9
Financial Result	-36,020.1
of which Passive Interest	-32,178.4
of which Passive Interest on Leasing	0.0
of which Active Financial Proceeds	-3,841.7
Extraordinary Results	-9,339.0
Ante-Tax Income	158,400.7
Taxes	-28,049.0
Net Income	130,351.7
Notional Taxes	0.0

Table 8 Net Income Definition

Net income could be used to pay dividends to shareholders, or it might be intended to the reinvestment in fund or reserve for future needs. Net income absolutely must not be confused with Revenues, this explanation may sound tedious and obvious, but it could lead to deep misunderstanding for the readers. It could happen to observe an increasing value of the Revenues over time (year by year) with a decreasing Net Income, over the same time span. This might be absurd for a business, yet there is no consequentiality between the two: it is not certain that to the increase of the former, corresponds an increase of the latter. Of course, obtaining a higher value of Revenues over time is positive, but it must be supported by a progressive increase of net income, otherwise it means that the business is not well operating somewhere along the process.

Liquidity Index

Liquidity index is a KPI that shows, in term of ratio, the liquidity available in short time compared to the amount of the debt to be paid in the same time span, which is usually one year. LI is used to determine a debtor's ability to pay off current debt obligations without raising external capital. This ratio should be positive, and, in our reference market, with the ideal value just above 1.5, a value below 1 could signal solvency problems in the short term.

$$LI = \frac{Short\ Term\ Credits\ (Assets)}{Short\ Term\ Debts\ (Liabilities)}$$

Liquidity describes the degree to which an asset can be quickly bought or sold in the market at a price reflecting its intrinsic value. Cash is universally considered the most liquid asset because it can most quickly and easily be converted into other assets. Tangible assets, such as real estate, fine art, and collectibles, are all relatively illiquid. Other financial assets, ranging from equities to partnership units, fall at various places on the liquidity spectrum.

The formula above is the simplest and least strict ratio that measures current assets against current liabilities, but there is, also, the so-called Acid-Test Ratio (ATR) or Quick ratio, which is slightly stricter. It excludes inventories and other current assets, which are not as liquid as cash and cash equivalents, accounts receivable, and short-term investments.

$$ATR = \frac{Cash\ and\ Equivalents + Short\ Term\ Investment\ and\ Collectible}{Short\ term\ Debts\ (Liabilities)}$$

Liquidity ratios determine a firm's ability to cover short-term obligations and cash flows, while solvency ratios are concerned with a longer-term ability to pay ongoing debts.

Days Sales Outstanding

Days Sales Outstanding (DSO) is the financial indicator that shows the average number of days a firm takes to collect the receivable after the sale. The lower the DSO, the lower the working capital and consequently the risk of default by its customers. On the contrary, the higher the DSO, the greater will be the level of financial resources used by the company to compensate for late payments or, in the worst cases, for missed payments. This latter situation added to the role of timing limits the evolutionary strategy of the firm. It seems obvious that at a financial level everything revolves around how much a company spend and how much it collects but knowing in detail “the moment when it is necessary to spend" and “the moment when it is necessary to collect" is a wealth of knowledge that no company can do without taking the utmost account.

There are two time-variable linked to sales: the first one depends only on the negotiation, the payment terms agreed in the contract; the second one is the time required to collect the payment after the receivable has become due and effective. This last condition is essential because once payments have become due, it means that the time for the customer to pay has expired and so the company can demand the payments.

When evaluating DSO, it should be taken into consideration the possibility that some payments are due by the clients but cannot be required yet: the expiration date has not yet been reached.

To compute DSO:

1. Total Revenues of the last twelve months:

$$Daily\ Average\ Revenues = \frac{Total\ Revenues}{365}$$

2. Total not requirable Revenues (time for paying has not expired yet):

$$DSO_U = \frac{Uncollectible\ Revenues\ (not\ expired)}{Daily\ Average\ Revenues}$$

3. Total requirable Revenues (payments already expired and not yet collected):

$$DSO_C = \frac{Collectible\ Revenues\ \ (expired)}{Daily\ Average\ Revenues}$$

4. Finally:

$$DSO = DSO_U + DSO_C$$

Firm must be as quick as possible in transforming receivables from its customers into spendable money planning the cash-flow needed to the routine regime.

To reduce the DSO, at company level is useful to work on payment terms in the contractual phase and analyse those customers always on late for payments the analysis, judging their behaviour as a constant.

Particular attention must be paid when new customers came in: checking that their economic solidity is a good indicator, even if it is not enough to classify as “good payer". The ideal value is DSO < 60 days.

Days Payable Outstanding

As defined in the previous paragraph for the “credit timing” we can also define something similar for the “debt timing”: Days Payable Outstanding (DPO) is a financial ratio that indicates the average days that a company takes to pay its bills and invoices to its suppliers, vendors or third parties. Going deer this index measures the average timespan between

when the company acquire the debt and the one when it pays it out. As previously highlighted the context of these KPIs is always the short-term, they are usually calculated on quarterly or annual basis, showing how the firm's cash outflows are being managed from the financial equilibrium point of view.

Recalling what said for COGS, DPO is defined as

$$DPO = \frac{Accounts\ Payable}{COGS} * 365$$

Having high DPO means that the firm takes much time to pay its suppliers, this allows firm to use the available cash for short-term investments and to increase their working capital and free cash flow. However, higher values of DPO may not always be a positive for the business, If the company takes too long to pay its creditors, it risks jeopardizing its relations with the suppliers and creditors could offer future trade credit less favourable to the firm. Another risk may also be losing out on any discounts on timely payments, if available, and it may be paying more than necessary.

A high value of DPO can be beneficial if the company is running short of cash, helping when it is better off delaying the payments than making them on time and then loaning the money by paying interest to continue its business operations. The ideal situation is DPO > DSO where DPO ≈ 90 days.

Net Financial Position

The Net Financial Position (NFP) is defined as cash and its equivalents plus readily monetizable securities, time deposits and financial collateral provided, less borrowings, plus positive and minus negative fair values of derivative financial instruments.

Using NFP is possible to establish which are the financial conditions of the company referring to its degree of liquidity.

To obtain this value, it is needed, as said, to calculate the difference between all the financial credits and all the financial debts. If this difference is positive, it is sure that short-term financial receivables, cash, and its equivalents are, as matter of fact, greater than short-term, medium-term and long-term financial liabilities: this means that the firm has an economic availability equal to the balance obtained. If the difference is negative, this

signal that that the company's financial debts will be highlighted: negative NFP points out a net exposure to third-party lenders, like finance companies, banks, bondholders, leasing companies or factoring ones, equal to the value obtained.

It should be paid attention to not include payables of not financial nature: payables to the tax authorities, to suppliers of goods and services or general tax and trade liabilities. Moreover, it should be considered the maturity date of each payable.

At this point, to evaluate the NFP of a business, is very important being able to calculate the global level of financial liabilities, this is done with the following steps:

5. Reclassify the balance sheet, clearing what has financial nature and what has not within liabilities and assets.
6. Pay attention to the algebraic sign at the end of the NFP:
    - Positive sign shows that the firm's liquidity and financial resources exceeded its indebtedness: balance is "on debit" (to be received).
    - Negative sign points out insufficient cash and its equivalents to cover the firm's debts, which results in the company's net exposure to the lenders: balance is "on credit" (to be given).

$$NFP = Cash\ and\ its\ Equivalent + Short\ Term\ Credit + Long/Medium\ Term\ Credit - Short\ Term\ Debt - Long/Medium\ Term\ Debt$$

It is often useful define also a short-term NFP to better highlight the financial risk within the year:

$$NFP_{ST} = Cash\ and\ its\ Equivalent + Short\ Term\ Credit - Short\ Term\ Debt$$

Finally, NFP is compared with:

7. NFP – Revenues: highlighting the capability of the firm to cover the debt through financial inflows came from sales.
8. NFP – EBITDA: highlighting the capability of the firm to cover the debt through financial inflows came from the ordinary operations.

Before going on in the analysis of this KPI, we must show, using the following table, how we computed the Net Financial Position (Table 9):

Balance Sheet	2021 [K€]
Financial Debts BT	3,168.0
Financial Debts MLT	1,849,977.3
Financial Activities	-1,562,529.0
Net Financial Position	**290,616.3**

Table 9 Net Financial Position Definition

Financial Freedom Index

Financial Freedom Index (FFI) is a KPI that is given by the ratio between the net financial position, both MLT and ST, and the net assets, this index should be as low as possible as proof of the level of capitalization of the firm:

$$FFI = \frac{NPF}{Net\ Assets}$$

It indicates which portion of each euro funding comes from the firm's own resources (partners or entrepreneur), so, any debt is involved. This is a useful method for identifying the solidity of the company itself in terms of capital and, also, allow to deeper understand the extent of total firm's assets have been financed through shareholders' equity. Therefore, the higher it is, the more the firm is solid and could rely on self-financing to fund new investment.

Conversely, the lower the FFI is, the more firm is using external funds to finance its investments. To make more readable this KPI often its values, that range from 0 to 1, are grouped:

- 0 to 30% (very low): (Very Low): the financial structure is seriously unbalanced.
- 31% to 50% (low): the financial structure is unbalanced.
- 51% to 70% (medium): the financial structure is balanced.
- 71% to 100% (high): the financial structure is well balanced and high suitability for profitable development.

Net Financial Position Over Revenues Index

Financial Position over Revenues Index is ratio KPI between the net financial position, both in MLT and in ST, and Revenues. It shows the equilibrium of these two firm's dimensions, and it try to estimate the percentage of the Revenues that must be used to repay all debts.

Like other "Debt KPIs" this index should be as low as possible, and the ideal value is FPOR < 30%, as much as higher is the value as much the equilibrium is unbalanced.

$$NFPOR = \frac{NFP}{Total\ Revenues}$$

MLT Horizontal Financial Equilibrium

Horizontal Financial Equilibrium (HFE) is a KPI that measures the ratio between the sources of financing on MLT, the Net Financial Position on MLT and Net Assets, and the Net Operating Fixed Capital (all the investments in MLT).

$$HFE = \frac{MLT\ Financements + NFP\ (MLT) + Net\ Assets}{Net\ Operating\ Fixed\ Capital}$$

From our analysis, emerged that the ideal value should be HFE > 1.00.

Focusing a bit more on the denominator:

Net Operating Fixed Capital (NOFC) is given by the difference between Non-Current Operating Investments (NCOI) and Non-Current Operating Payables (NCOP), they are respectively (Table 10):

- NCOI are intangible and tangible fixed assets and include any shareholdings (financial fixed assets) considered as a strategic, and therefore operational, investment of the firm.
- NCOP are all trade payables related to the investments acquiring, all the provisions for non-current risks and strictly related to the investment charges, and eventually the Severance Indemnity Fund.

Balance Sheet	2021 [K€]
Intangible Fixed Assets	634,358.8
Tangible Fixed Assets	2,034,698.7
of which Buildings and Lands	1,517,487.0
of which Technical (Installations, Machineries and Equipment)	261,189.8
of which Other Assets	256,022.0
Net Operating Fixed Capital	**2,669,057.5**

Table 10 Net Operating Fixed Capital Definition

Contribution/Tax Regularity Index

Contribution/Tax Regularity Index is a KPI that measures the ratio between the sum of social security and tax debts divided by the sum of the cost of labour plus taxes. This index should be as low as possible, the ideal value is CTRI < 5.50%.

$$CTRI = \frac{Social\ Securities + Tax\ Debts}{Total\ Labour\ Cost + Taxes}$$

Time to Repay Financial Debts

Time to Repay Financial Debts (TRFD) is a KPI that measures in how many years the firm is able to repay its financial debts using all potential operating cash inflow. TRFD is composed by other two KPIs already explained: NFP and EBITDA.

- NFP express the financial position highlighting if it is “on credit” or “on debt”.
- EBITDA express the “potential” cash inflow generated by the operation done inside the firm.

The index is commonly used, especially by bank, to point out the attractiveness of a company. A careful reading of the parameters that compose TRFD and the analysis of the real cases suggests instead to greater caution, due to the non-uniqueness in defining the two items of the ratio.

- EBITDA (Earnings Before Interests, Taxes, Depreciation and Amortization) shows the margin deriving from the characteristic operation of the company, but, if compared with the operating margin, it results in a systematic higher value, due to the presence of the provisions, subtracted when operating margin is computed. Revenues are at the net of consumption, fixed and variable costs, general and administrative costs.
- NFP (Net Financial Position): the algebraic sum of Financial Payables at the net of cash liquidity and its equivalents.

$$TRFD = \frac{NFP}{EBITDA}$$

Therefore, some questions without a uniqueness answer could arise:

- As financial debts should be included, also, what is owed by partners? Should be debts for bonds issued to shareholders included in NFP?
- Are the operating Revenues defined in unique way? What items should be included in the statutory balance sheet?

The last point has a great importance because in some real cases in which the consideration or the exclusion of the so-called 'Other Revenues and profits', from the calculation of the NFP, reflects a deep change in the final evaluation of that KPI and the following assumption made on its value (the time in which the firm is able to pay off its financial debts).

Therefore, even if this TRFD is really appreciated among analysts, due to its kind of response information, it is always a good practice to go deeper and try to discover how the sub indicators have been calculated.

TRFD could be ranked with three possible evaluations, that reflects the trend of the business:

- TRFD > 5 (Very Danger Situation): the financial institutions or generic lenders of the firm should be scared about the possible repayment. The timespan is too long and the probability to not see the money back becomes higher and higher.
- 3 < TRFD ≤ 5 (Risky situation): the financial institutions or generic lenders should keep an eye on the firm's behaviour, anyway there is still room for possible improvements: the timespan is significant, but not too large to be alarming.
- TRFD ≤ 3 (Optimal situation): financial debts are repaid within three years signalling a good solidity of the business, attracting more possible lenders, who would be willing to lend money also in the future.

Percentage Current Cash Flows

Percentage of Current Cash Flows (CCF) is a KPI that measures the ratio between the current cash flows generated by the firm, before MLT investments, taxes and financial result, and the Revenues. The higher is this KPI the more the more a firm is able to generate cash inflow through its core operations and processes, the ideal value is CCF% > 15%.

$$CCF = \frac{Current\ Cash\ Flows}{Total\ Revenues}$$

Surplus-Deficit to Revenues

Surplus-Deficit over Revenues (SDOR) is a KPI that shows the incidence of all cash flows generated (Surplus) or absorbed (Deficit) over the total amount of Revenues. It will be excluded the cash flows to/from shareholders and third financing parties of the Company. Also, this KPI should be as high as possible, going deeper it gives the picture of how much cash is generated throughout the whole firm and how this Surplus or Deficit is used to repay lenders or shareholders.

$$SDOR = \frac{Net\ Cash\ Flow}{Total\ Revenues}$$

Employed Work Force Productivity Index

Employed Work Force Productivity Index is a KPI that measures the ratio between the Added Value and Cost of Labour. In other terms it shows in which amount the employed personnel is able to produce value for the tyre shop.

$$EWFP = \frac{Added\ Value}{Labour\ Cost + Notional\ Taxes}$$

This Index is useful to identify the possible situations that prevent the increasing in the Revenues, and so in the productivity, within a tyres shop. Moreover, EWFP allows to measure the effectiveness of a firm policy or strategy, giving a view of how it is perceived by the employee. Going a bit beyond the economic meanings of this index, it could be used, also, to test the degree of satisfaction of the employed personnel.

Ideally, from our analysis, this KPI should be higher than 1.30.

Plant Productivity Index

As already done for the personnel, also for the entire Plant is possible to define a productivity index. In this case it is used the First Margin in the numerator, instead of the Added Value, and as denominator we had the sum of Structural Cost, Labour Cost, Depreciation, Provisions, Write-Dows, and the Financial Result:

$$PPI = \frac{First\ Margin}{Structural\ Cost + Labour\ Cost + Depr. + Prov. + WriteDows + Financial\ Result}$$

This Index, as the previous, is useful to identify the possible situations that prevent the increasing in the Revenues, and so in the productivity of the tyres shop. In addition, PPI allows to better measure the effectiveness of a firm policy or strategy, giving a general overview of how the plant is able to create value for the customers.

Ideally, from our analysis, this KPI should be higher than 1.125.

Tyres Markup

Before going on with more details of this KPI, it is useful to define what is a Markup: it is the difference between the selling price of the service or the good offered, and its production cost, usually expressed as a fraction of the cost itself. Appling a markup generates positive profits for the tyres shop.

Tyres Markup is a KPI that measures the ratio between Revenues coming from only the sales of new tyres and the relative purchase cost:

$$Tyres\ Markup = \frac{Total\ Revenues\ from\ Tyres}{Tyres\ Purchase + \Delta Inventory}$$

Just one more consideration should be done on the denominator, it also includes the change in inventory, this is done to take into account the possibility to sale a part of the inventory, where the relative cost was sustained in the previous years.

Generating profit, this indicator should be ideally the highest as possible, but from our analysis arose that a reasonable value is around the 18.0%.

Breakeven Point

The Breakeven Point (BEP) is the threshold level of the Revenues that assure to cover all possible costs, without any margins or gains. So, it is the minimum Revenues that must be reached to result in parity with the entire set of cost that the tyres shop must face during the year.

The BEP could be evaluated using different units of measurement:

- ***Currency***: is the most used method, it clearly said the amount of money required to cover the costs.

- ***Quantity Sold***: it is often used in addition to the first method, it gives insights on the number of units that must be sold to cover the costs. This method has many drawbacks, the easiest to identify is that the possible discounts or similar are ignored, leading to a wrong estimation.
- ***Time***: it is quite common to find when evaluates the elasticity of a firm, but it is not so easy to understand. The BEP expressed in time shows at which point of the year the tyres shop will cover the entire set of costs, and so it represents the point in time in which the firm will start gain.

The Breakeven Point could be computed in different ways:

- **Graphically**: this method allows the reader to better understand the deep correlation between the BEP and the structure of the business model of a tyres shop, and consequently the reader is able to better catch the nature of the strategic choices made in running the business. To explain the method is better to start from the output and then going back to the explanations, the following graphs is usually presented as the outcome:

  In a Cartesian Plan (Table 11) we have time as independent variable (x-axis) and the cash flow as dependent variable (y-axis), this last axis presents multiple series related to the cash flow of each period:

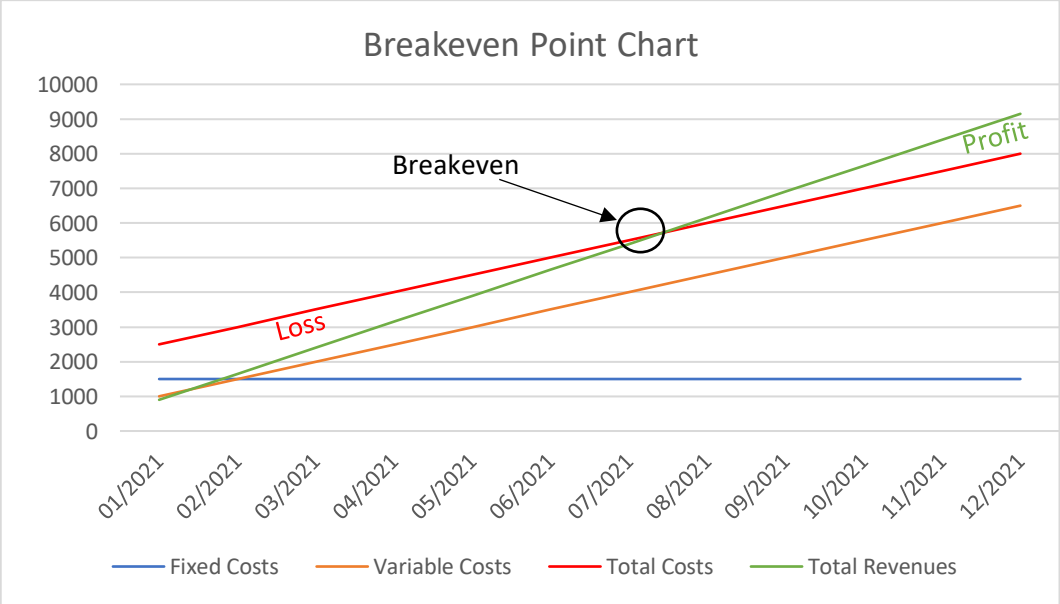


Table 11 Breakeven Point

- In Blue is presented the amount of the Fixed Costs, they do not change over time.
- In Orange is presented the amount of Variable Costs, they change according to the production and sales volume following a proportional relationship.
- In Red is presented the Total Costs, they are the sum of the Fixed and Variable ones.
- In Green is presented the Total Revenues, they are proportional to the sales volume
- Approximately among July and August is possible to highlight the intersection between the Total Cost sand the Total Revenues, this is by definition the Breakeven Point, consequently we can identify two regions:
    - Loss Region: where the Total Costs are higher than the Total Revenues
    - Profit Region: where the Total Revenues are higher than the Total Cost.

If the two lines related to the Totals will not cross, this means that there will never be a balanced budget between Costs and Revenues, so the tyres shop will close the year in the Loss Region.

An increase in Fixed Costs and/or Variable Costs moves the BEP to the right, where as an increase in the Revenues moves the BEP to the left. The higher the value of BEP, the higher will be the probability to end with losses (and huger will be the area on the left of BEP); on the other hand, having a lower BEP gives space to higher probabilities to profit.

- **Analytically**: this is the second method to assess the BEP, it is based on the following formula:

$$BEP = \frac{Fixed\ Costs}{1 - \frac{Variable\ Costs}{Total\ Revenue}}$$

This formula is based on a strong assumption that the interested firm trades only one product, but, as everyone can easily imagine, a tyres shop sell batches of different products and services, to overcome this problem so a possible computation could be based on the average of Fixed Costs, Variable Costs, and the

Totals. Moreover, there are some mathematical tricks by which is possible to assess the value of the BEP of a product

A, as a function of a known quantity produced of another product B:

$$Q_A = \left(\frac{Fixed\ Costs}{P_A - Variable\ Costs_A}\right) - \left(\frac{Q_B * (P_B - Variable\ Costs_B)}{P_A - Variable\ Costs_A}\right)$$

Where:

Q_A, Q_B are the quantity produced to reach the BEP respectively for A and B.

P_A, P_B are the selling price respectively for A and B.

Finally, for the aim of our project, as done in the past, we opted to use the Normalize BEP, which is expressed by the ration of the weighted BEP and the Value of Production (VoP), where the weighted BEP is obtained by multiplying the BEP of each company with the respectively VoP:

$$\begin{cases} BEP_{wi} = BEP_i * VoP_i \\ BEP_{\%} = \dfrac{\sum_i BEP_{wi}}{VoP_{TOT}} \end{cases}$$

Where the $BEP_{\%}$ is the Normalized Breakeven Point, it shows which percentage of BEP is referred to the amount of the Total Value of Production of the year of the whole reference market.

The ideal value for the tyres shop, according to our analysis, is $BEP_{\%} < 88.0\%$.

Assets Elasticity

The Assets Elasticity is a KPI that measures how much the most liquid operating capital could vary in relation to the total operating assets, it is computed through the ratio between the sum of Current Inventory, Credits from Clients, and Other Credits, divided by the Total Operating Assets:

$$Assets\ Elasticity = \frac{Current\ Inventory + Credits\ From\ Clients + Other\ Credits}{Operating\ Assets}$$

This index is especially used to assess the reactivity of the tyres shop when external conditions change rapidly, it expresses the company's ability to deal with an unexpected situation. The higher the degree of Assets Elasticity, the more the company proves to be

able to deal with any unforeseen circumstances, while the higher the rigidity is, the lower this capacity becomes.

From our results the ideal value is just above the 60%.

Managerial Responsiveness Index

The Managerial Responsiveness Index is a KPI that shows how the managerial actions and choices impacts on the total Revenues. The Managerial Responsiveness Index measures the impacts in percentage terms of the Total Revenues of the improvement or worsening of the Fixed Costs, net of the effect due to the dimensional change in the Revenues itself. The formula which expresses this KPI is quite complex to read, so it is useful to introduce mid-values and KPIs to help the reader in reading.

The first step is to compute the Fixed Cost for each year (Table 12):

$$Fixed\ Costs = Structural\ Costs + Labour\ Costs + Depreciation, Provisions, WritesDown$$

Income Statement	**2021** [K€]	**2020** [K€]	**2019** [K€]	**2018** [K€]
Structural Costs	-615,689.6	-1,703,312.5	-1,660,385.6	-1,502,352.3
Labour Costs	-988,843.6	-2,138,181.1	-1,810,690.3	-1,745,887.7
Depreciation, Provision, Write-down	-50,304.0	-293,255.7	-316,604.9	-307,095.3
Total Fixed Cost	**-1,654,837.3**	**-4,134,749.3**	**-3,787,680.8**	**-3,555,335.4**

Table 12 Total Fixed Cost

The second step is to compute the ratio between the Fixed Cost and the Total Revenues for each year (Table 13):

$$FC_{PY} = \frac{Fixed\ Costs_{Previous\ Year}}{Total\ Revenues_{Previus\ Year}}$$

$$FC_{CY} = \frac{Fixed\ Costs_{Current\ Year}}{Total\ Revenues_{Current\ Year}}$$

Income Statement	2021 [K€]	2020 [K€]	2019 [K€]	2018 [K€]
Total Revenues	**5,283,795.0**	**10,356,818.7**	**10,476,716.9**	**10,119,405.9**
Total Fixed Cost	**-1,654,837.3**	**-4,134,749.3**	**-3,787,680.8**	**-3,555,335.4**
FC_{CY}	1,654,837.3	4,134,749.25	3,787,680.81	3,555,335.38
FC_{PY}	4,134,749.25	3,787,680.81	3,555,335.38	0.00

Table 13 FCcy and FCpy Definition

A notice should be done for the last value of the 2018, it is 0 because the data related to the 2017 were not collected.

The third step is to compute the change of the Cash Flows at the net of the variations in volumes of the Fixed Costs:

$$\Delta\ Cash\ Flows\ from\ Volumes = Total\ Revenues_{Current\ Year} * (FC_{CY} - FC_{PY})$$

Finally, Managerial Responsiveness Index could be assessed (Table 14):

$$Managerial\ Responsiveness\ Index = \frac{\Delta\ Cash\ Flows_{Volumes}}{Total\ Revenues_{Previous\ Year}}$$

2021	2020	2019	2018
4.39%	-3.77%	-1.02%	-

Table 14 Managerial Responsiveness Index

As previously noticed for the last year it is not possible to compute this KPI.

Operating Leverage Sensibility to Volume

The Operating Leverage Sensitivity to Volume is a KPI that measures, through the sensitivity of the gross operating result to the variation in volumes, the tyres shop's ability to well stand the elasticity of demand with respect to Pricing Policies.

To compute this KPI is first needed to compute the Total Variable Costs and the Contribution Margin:

- The Total Variable Costs are computed as the Cost of Goods Sold, summing the following voices of cost (Table 15):

Income Statement	2021 [K€]
Change in Inventory	-152,946.2
Tyres Purchases	-2,499,340.3
Spare Parts and Consumables Purchases	-117,985.7
Windows Purchases	-13,447.0
Inspection Costs	-24,651.0
Other Purchases	-616,827.7
Cost of Goods Sold	-3,425,197.9

Table 15 Cost of Goods Sold

- The Contribution Margin is calculated as the difference between the Total Revenues and the Total Variable Costs:

$$Contribution\ Margin: Total\ Revenues - Total\ Variable\ Costs$$

Finally, is possible to compute the Operating Leverage Sensitivity to Volume as the ratio between the Gross Operating Result (EBIT) and Contribution Margin:

$$Operating\ Leverage\ Sensitivity_{Volume} = \frac{Gross\ Operating\ Result\ (EBIT)}{Contribution\ Margin}$$

This ratio should be as low as possible, ideally < 14.0%.

Operating Leverage Sensibility to Price

As said for the previous KPI, the Operating Leverage Sensibility to Price is a KPI that measures, through the sensitivity of the gross operating result to the variation of prices, the tyres shop's ability to well stand the elasticity of demand with respect to Pricing Policies.

This KPI is defined as the ratio between the Gross Operating Result (EBIT) and the Total Revenues:

$$Operating\ Leverage\ Sensitivity_{Price} = \frac{Gross\ Operating\ Result\ (EBIT)}{Total\ Revenues}$$

This ratio should be as low as possible, ideally < 6.0%.

Income Self-Financing

Income Self-Financing is a KPI that measures the ratio between the net income and the net operating invested capital at the beginning of the under analysed period, ISF indicates, also, the firm's attitude for self-financing future investments, highlighting how much of the Invested Operating Net Capital could increase because financed through the Net Result. This KPI should be as positive as possible.

$$ISF = \frac{Net\ Income}{Net\ Invested\ Operating\ Capital}$$

Analysis of results

Abstract

This last chapter is dedicated to the analysis of the output obtained from the previous two chapters. To recap, the first chapter was dedicated to the quality organization and the way of collecting data for our project, especially focusing on the instruments used to keep traceable all these data, the contribution on the GTW and the organization suggested through the different tables in adopting values scales in order to easily and operationally rank the tyres shops' way of working.

The second chapter has been dedicated to the presentation, definition, and clarification of the entire set of KPIs used during the certification process, each one was provided of a briefly description to explain the meaning and how it is computed. It is useful to remember that is through this KPIs that each business is evaluated, especially the economic and financial performances.

The aim of this last section is to extend and study the results of the previous two sections to the market segment as a whole clarifying what should be the value for each KPI to reach the maximum valuation by each single tyres shop.

Value of Production

The first analysis is done on the Value of Production and especially on the Average Value of Production, this is the first because is through that KPI that is possible to categorize the tyres shop in small, medium, or big. Once obtained the overall value of the market is possible to find the average, that value corresponds to the middle size, then adding the 50% is identified the big size, and finally, subtracting the 50%, the small size. The average of the Value of Production varies over time, so the clustering of the tyres shops is subject to change over time. In order to have a graphic idea, the following chart represents the aggregated Value of Production (Table 16):

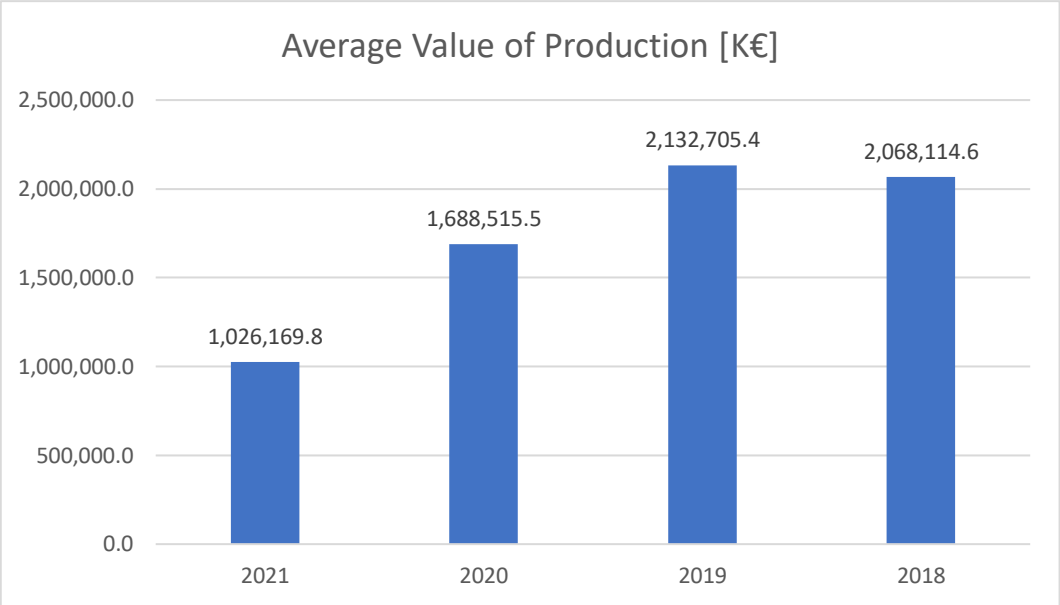


Table 16 Average Value of Production

and the respectively sizes over time measured in K€ (Table 17):

	2021 [K€]	2020 [K€]	2019 [K€]	2018 [K€]
Big Tyres Shop	1,539,254.7	2,532,773.2	3,199,058.1	3,102,171.9
Medium Tyres Shop	1,026,169.8	1,688,515.5	2,132,705.4	2,068,114.6
Small Tyres Shop	513,084.9	844,257.7	1,066,352.7	1,034,057.3

Table 17 Sizes Definition

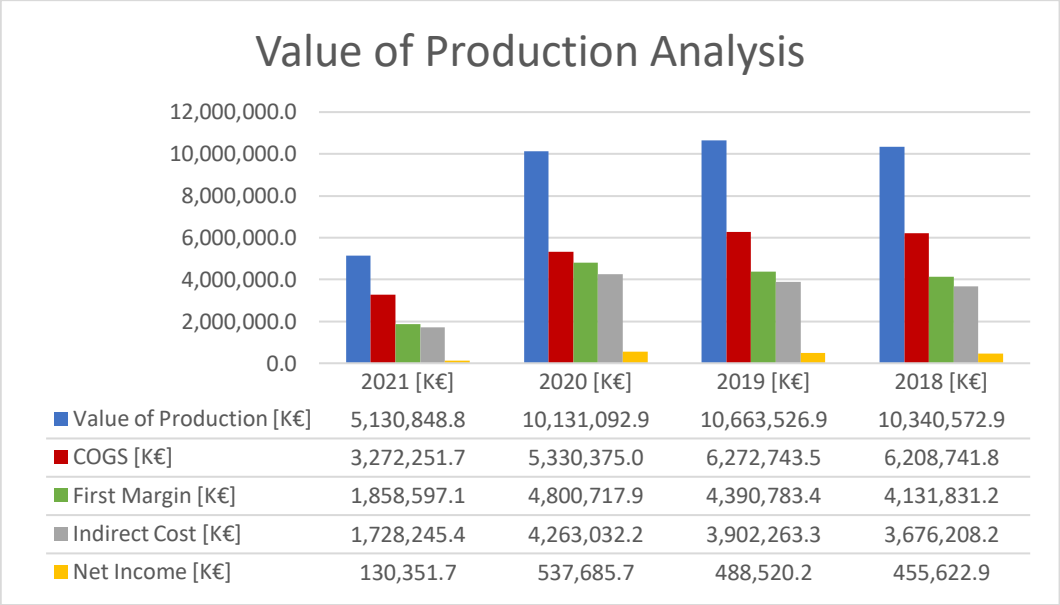
From our analysis, it emerges that the 40% of the tyres shops are have a big size, the same value is possible to be found for the medium size and the 20% have small size. Once found the division in size is possible to perform a more accurate comparison among the different firms.

Once assessed and assigned the size to each firm is possible to highlight that, as it is clearly visible from the chart, that during the last two years the aggregated average Value of Production decreased, especially in the past year, this is due to the Covid-19 restrictions. Most of the people were constrained to stay at home, this was translated in little use of the car, so fewer people need tyres shop services. Obviously, this decrease has a negative connotation, and it should be arrested as soon as possible, overcoming this phase of contraction, and restarting in growing and generating values.

It has a crucial importance the fact that tyres shops do not produce goods, rather they provide services. Thus, the decrease of the Value of Production, and in more general terms

the meaning of this KPI, could be translated in terms of investments in fixed assets and in labour volumes.

Once analysed the Average of the Value of Production, it is possible to show and study the aggregated values obtained, relating them to, as anticipated in previous chapter, the COGS, First Margin, Indirect Cost and Net Income. This analysis is done firstly in absolute terms, as showed in the following graph, highlighting one times more the recession nature of the last two years, all values are decreasing (Table 18).



	2021 [K€]	2020 [K€]	2019 [K€]	2018 [K€]
Value of Production [K€]	5,130,848.8	10,131,092.9	10,663,526.9	10,340,572.9
COGS [K€]	3,272,251.7	5,330,375.0	6,272,743.5	6,208,741.8
First Margin [K€]	1,858,597.1	4,800,717.9	4,390,783.4	4,131,831.2
Indirect Cost [K€]	1,728,245.4	4,263,032.2	3,902,263.3	3,676,208.2
Net Income [K€]	130,351.7	537,685.7	488,520.2	455,622.9

Table 18 Value of Production Analysis

The last reflection that this KPI deserves is related to its composition itself, and especially how the values that compose the Value of Production changed over time. As it is possible to see in the following graph, during the 2021 there was a consistent increase in the COGS with respect to the historical values, this lead to a remarkable decrease in the Net Income of the same year, also the First Margin and Indirect Cost registered a decrease (Table 19).

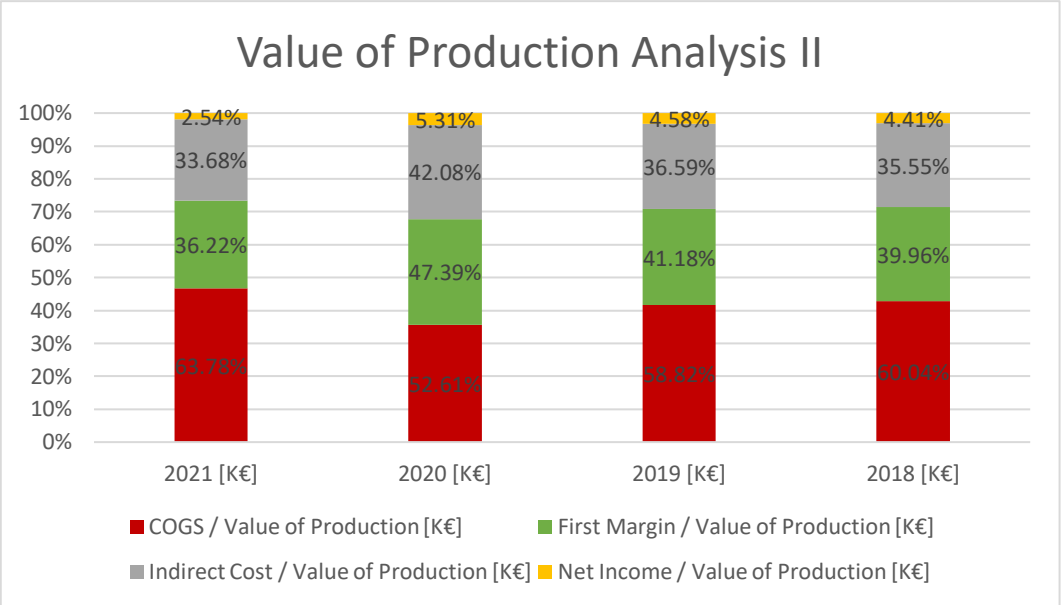


Table 19 Value of Production Analysis II

First Margin

To conclude the Economic section of our KPIs there is the analysis of the First Margin. As said many times, the last two years were characterized by extraordinary crisis and tentative to bound it, so the final effect on the first could be a bit more misleading if all previous KPIs are not clear enough to the reader, looking at the following chart one could be tempted to say that only the 2021 shows a moment of crisis. This behaviour could be summarized in lower revenues and higher cost occurred at the same time (Table 20).

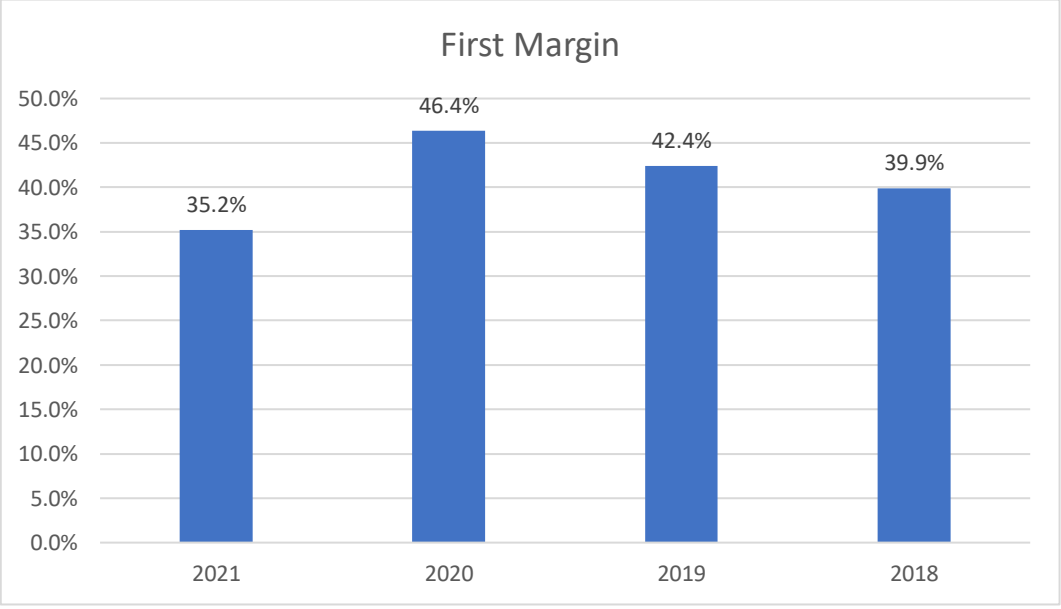


Table 20 First Margin

Once studied the historical trend of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the lower limit of each range (Table 21).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	20.0%	22.5%	25.0%	27.5%	30.0%	32.5%	35.0%	37.5%	40.0%	42.5%	45.0%

Table 21 First Margin Evaluation Ranges

Return On Equity

Once found the values related to the overall production and the net income generated, it is possible to start investing the performances of the tyres shop. The first indicator computed and analysed is the productivity of the net assets, the following chart shows the evolution over our timespan.

How it is possible to see, this KPI is quite stable over the years, this could be explained by two aspects: the first one is that a tyres shop does not require any type of special asset during the running of the core operations; the second one is related to the seasonality of the business of interest, periodically any car need to be checked in a tyres shop. From the same graph is, also, possible to see the effect of the Covid crisis, among the last two years the ROE fell by one percentage point, assuming the long-term nature of the assets employed, this is due to a decrease in the profit by the firm.

As previously highlighted, also this KPI is pointing out a moment of contraction of our reference market. As said in the previous section, this KPI should be the higher as possible, but keeping safe the assumption done on the assets employed, this means that to increase the ROE an higher return is required and so two possible ways could be pursued, which are the most classical ones, or increase the volume of clients trying to keep the same costs, or reduce the overall costs, but it is important to say that this latter option is hardly pursuable when there is general period of crisis, especially when it is related to the first primary goods as the electricity (Table 22).

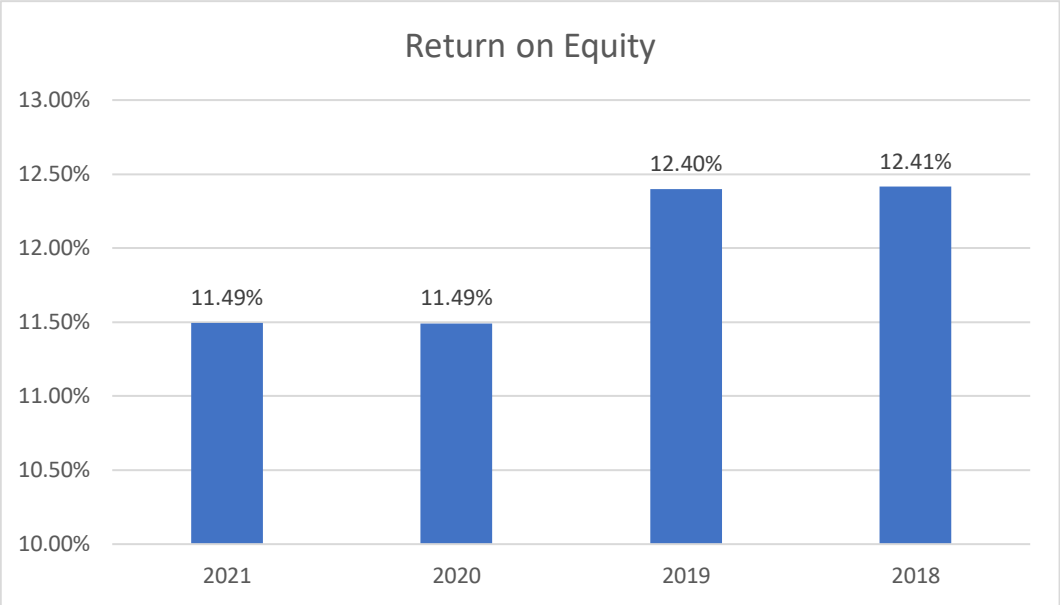


Table 22 Return on Equity

Once studied the trend of the market, it is possible to define the scale of evaluation, and in the following table are showed the range with the respective valuation. It is useful to remark that what is showed in table is referred only to the certification of the 2021 (Table 23).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	-0.60%	-0.50%	0.00%	0.80%	1.40%	2.20%	3.40%	4.80%	6.50%	8.10%	9.90%

Table 23 Return on Equity Evaluation Ranges

Gross Return on Assets

As said in the previous section, this KPI is a measure of the value generated by the core operations of the tyres shop excluding the entire set of not operative, financial, and extraordinary managing revenues, with respect to the operating assets employed. The following graph shows the values of the GRA of the last four years and, how it is possible to easily assess, also this KPI is highlighting a crisis period of our reference market. This KPI is a bit more accurate than Net Income in showing where the problems are lying.

The operative management revenues are decreasing leaded by a general lower overall revenues and higher costs, this imply that the assets employed are generating lower value

than in the past, this is especially true for the last year, where is showed that the value generation is helved with respect to the 2018 (Table 24).

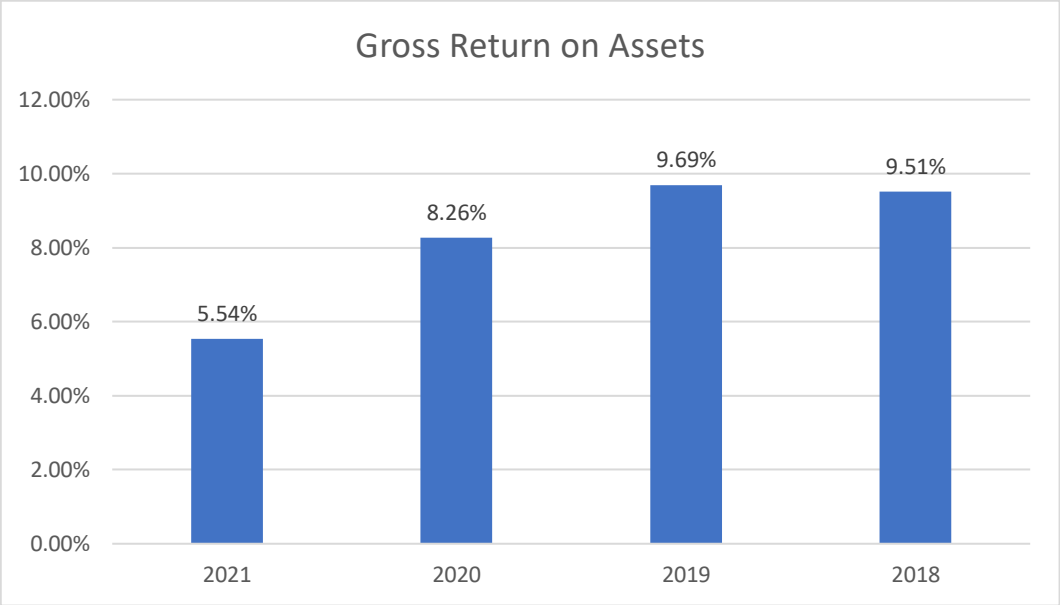


Table 24 Gross Return on Assets

At this point, having studied the historical trend of the market, it was possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021 (Table 25).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	-1.50%	-1.10%	0.00%	1.30%	2.10%	3.00%	4.25%	5.70%	7.35%	8.65%	10.00%

Table 25 Gross Return on Assets Evaluation Ranges

Return on Sales

The next computed KPI need a bit more of explanations due to the fact that, as it is possible to see from the following chart, an up-down trend is showed. The historical values fix this index around the 5.70%, during the 2020 a rapid increase was registered, this sudden growth could be explained partially by an increment in the prices asked for the normal operations of a tyres shop, but the main reason behind this peak is an accounting reason: for the 2020 the Italian government suspended the accountability of the depreciation and the amortization, leading to higher EBIT, which is the numerator of the interested KPI.

As regards the last year analysed, it was registered a decrease of 3 percentage points with respect to the previous year and 2 percentage points with respect to the historical values, highlighting, one time more, the fact that a contraction period is running in (Table 26).

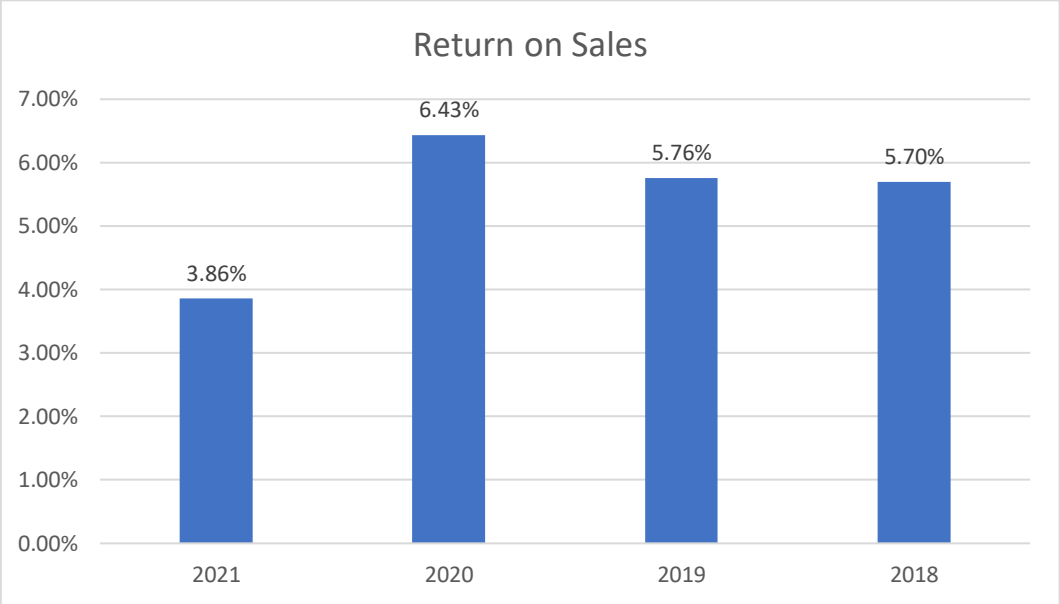


Table 26 Return on Sales

Once studied the historical trend of the market and especially what happened in the last two years, it was possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021 (Table 27).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	-1.50%	-1.00%	0.00%	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	3.75%	4.00%

Table 27 Return on Sales Evaluation Ranges

Gross Assets Turnover

The Gross Assets Turnover must be analysed at the same time of the previous one KPI, because it simply gives a more general overview of the productivity of the assets compared the Operating Assets Turnover. What said for the OAT is still valid, it should be simply added that the GAT is increasing with a higher CAGR, this means that the tyres shops are using an increasing amount of debts in financing their operative management. This last fact must not be viewed as an absolute negative remedy, but it simply shows that the business owners and market itself are becoming again more confident in using the debt, because

they are pretty sure to be able to repay everything, as done for the first two years under our analysis, where the GAT was significantly higher than the last computed (Table 28).

Table 28 Gross Assets Turnover

Once studied the historical trend of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021 (Table 29).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	1.50	2.00	2.20	2.40	2.60	2.80	3.00	3.25	3.50	3.75	4.00

Table 29 Gross Assets Turnover Evaluation Ranges

Operating Assets Turnover

The next one analysed KPI is the Operating Assets Turnover, it should be remembered that it is a measure of the productivity of the operating assets with respect to the total revenues. As showed in following graph, during the last years it was registered a decrease, remarking what it was already said for the previous KPIs.

Something that could be added looking at this indicator is that, even if a crisis period is running, the tyres shops are always able to generate values, and this generation is started to increase again (Table 30).

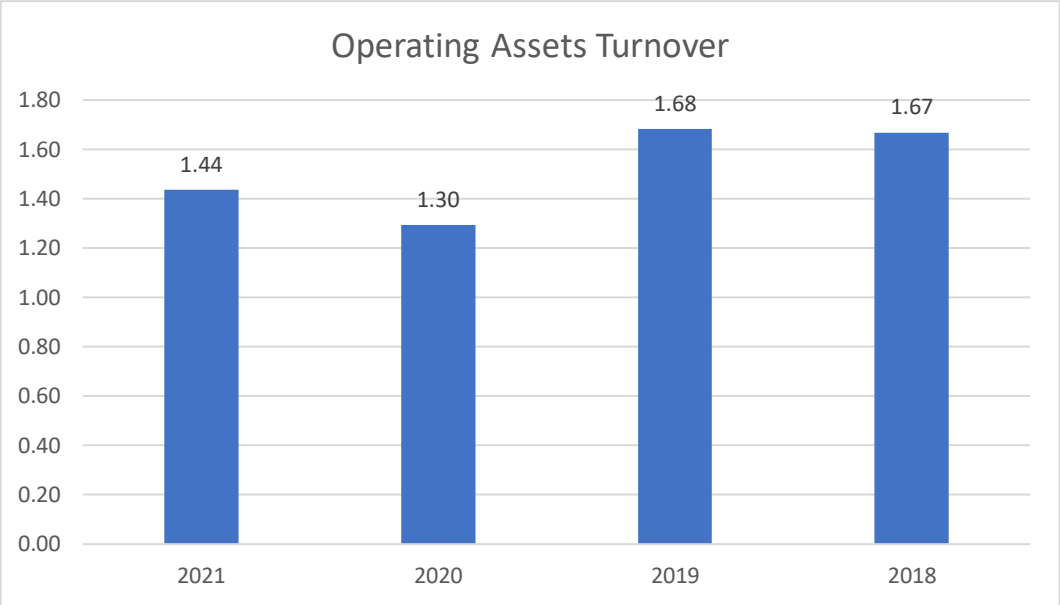


Table 30 Operating Assets Turnover

Having studied the historical trend of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021 (Table 31).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	1.00	1.10	1.20	1.30	1.40	1.50	1.70	1.90	2.10	2.30	2.50

Table 31 Operating Assets Turnover Evaluation Ranges

Financial Leverage

Following the reasoning mentioned before about the debt, the Financial Leverage KPI is introduced. It is a measure of the debt used to finance the business, and, as showed in the following chart, during the last years it is in constantly increasing, and in the last year studied it dramatically increased, quite doubling the FL. This explosion could be explained by a regulation introduced to bound the Covid-19 crisis, indeed access to debt during last years is a bit easier for the companies, the interested paid are a bit lower and it is the state itself the become a guarantee.

Following this regulation, many tyres shops decided to increase the amount of debt, especially in 2021, hoping that a return to the normality is near, and so they are preparing themselves to the first boom of demand (Table 32).

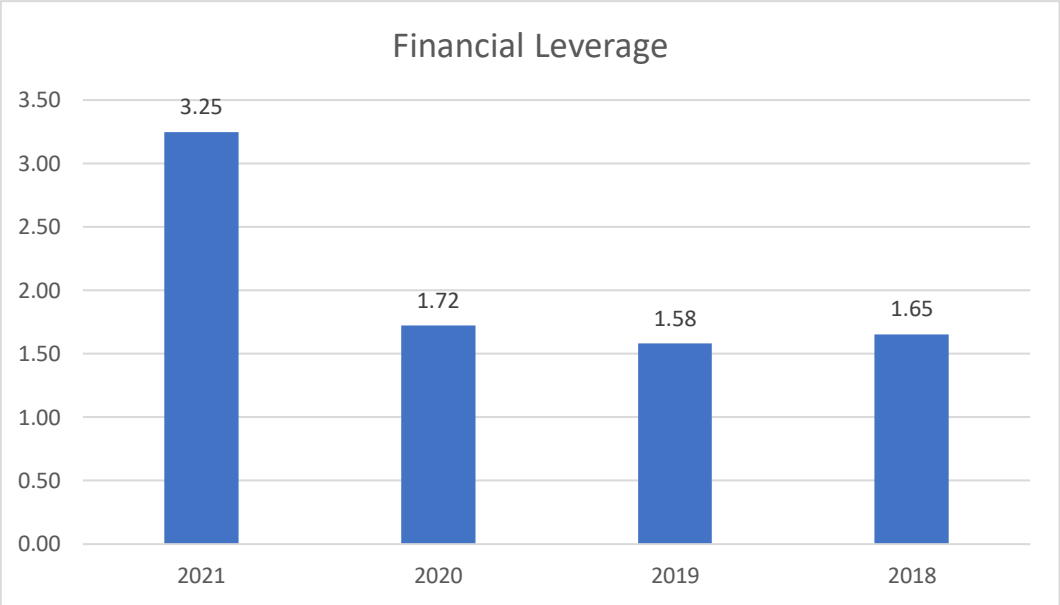


Table 32 Financial Leverage

Having studied the historical trend and behaviour of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021 (Table 33).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	1.77	1.82	1.84	1.86	1.88	1.90	1.92	1.94	1.96	1.98	2.00

Table 33 Financial Leverage Evaluation Ranges

FinExtraFisc Incidence

The following KPI analysed is FinExtraFisc, being a not common indicator, it is useful to remind that it measures the percentage of the gross operating income eroded by the financial, fiscal, and extraordinary management. As it is possible to see in the following chart, FEF was attested nearly to the 80.0%, and this value kept stable also in 2020 thanks to Special Regulation emanated to bound the Covid-19 effects. What is really important to highlight is the decreasing of the KPI in past year, this means that tyres shop paid lower taxes and passive interest, this was wanted by the Italian government, in the same regulation mentioned in the analysis of the previous KPI, in order to drive up the Net Income of the companies and lowering the crisis effects (Table 34).

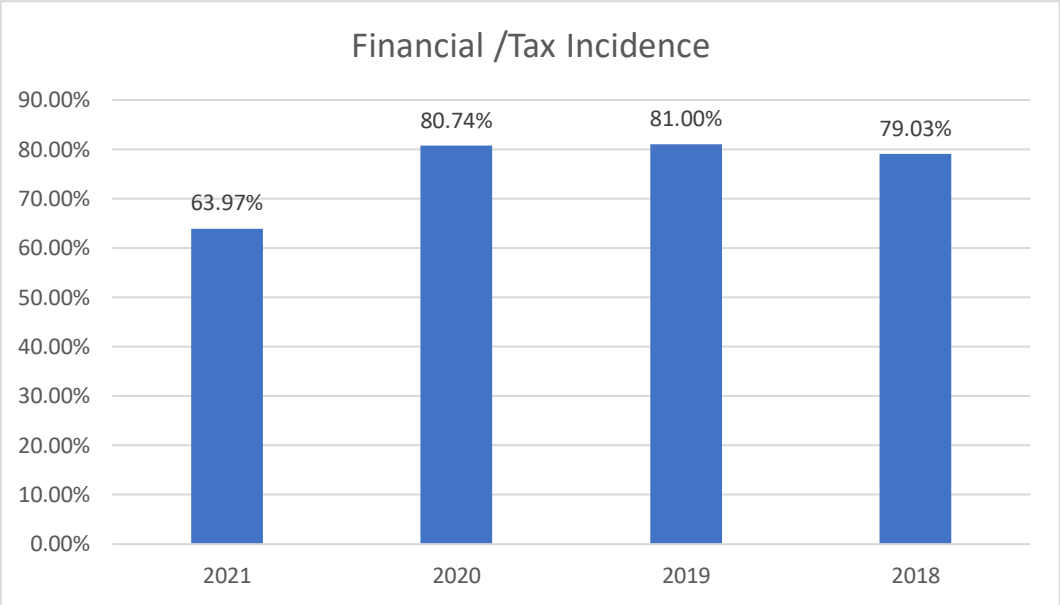


Table 34 Financial / Tax Incidence

Once studied the historical trend of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the lower limit of each range (Table 35).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	22.5%	27.5%	30.5%	33.5%	36.5%	39.5%	41.5%	43.5%	45.5%	47.5%	49.5%

Table 35 Financial /Tax Incidence Evaluation Ranges

Incidence of Financial Result

Following the reasoning introduced in latter paragraph, the Incidence of Financial Result is analysed, this KPI simply gives a measure of the revenues burned by the passive interests, From the following graph is possible to see that in last two years this index increased dramatically, where in 2019 it was even negative (this means that the CF generated by the active interest were higher than the CF of the passive one), this behaviour is simply explained remembering that in these years it was asked much more debt, and so the amount of interest growled as consequence (Table 36).

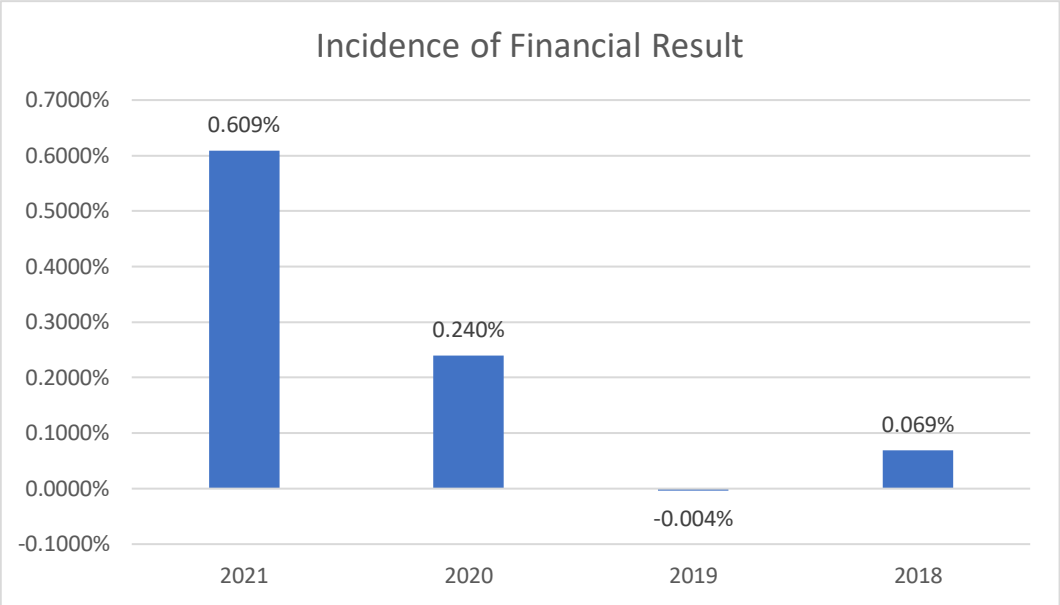


Table 36 Incidence of Financial Result

Having studied the historical trend and behaviour of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the upper limit of each range (Table 37).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
Low	4.00%	3.70%	3.40%	3.10%	2.80%	2.50%	2.20%	1.90%	1.60%	1.30%	1.00%

Table 37 Incidence of Financial Result Evaluation Ranges

Net Income

The perspective offered by the previous KPI shows a market in contraction, but that indicator alone could be misleading, so it is often computed side by side with the Net Income.

The following chart shows the aggregated values of the market over the past four years (Table 38):

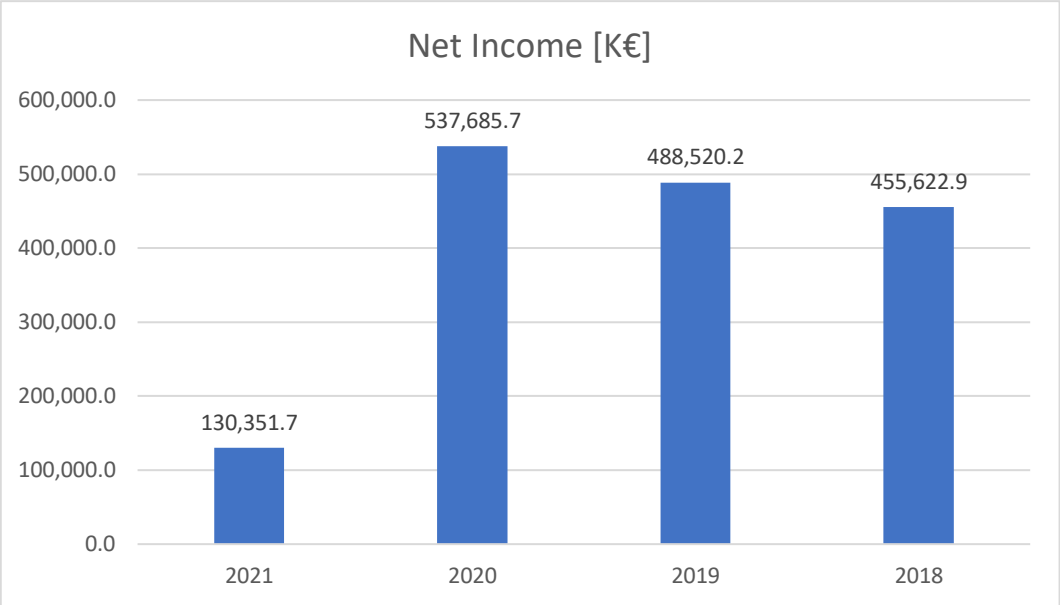


Table 38 Net Income

As anticipated by the chart of the Value of Production, a clear moment of contraction is showed, but this is especially true only for the past year, whereas in 2020 even an increase is showed. The reasons behind these values lie in how the Covid related crisis started and how is going on, in 2020 there were for the most of the year a stop in the operations, but what really matters is the timing, the lockdown started at the beginning of March, once performed the all operations required to afford the winter, and it ends at the beginning of May, just in time to start with the all operations required to afford the summer time, and in addition the majority of the cars, being stayed stopped for more than two months, required more than the ordinary planned maintenance, this is especially true for tyres and related operations.

On the other hand, the 2021 shows a contraction due to the absence in volumes of the operations performed, because many of them were performed during the 2020.

In addition to these, also the timing of the major costs should be analysed to have a clearer explanation of the trend of Net Income, but it exceeds the scope of thesis work.

For the Net Income it was not possible to define a scale of evaluation due to the enormous variation between of each tyres shop with the other, what was considered imperative to satisfy was the positive nature of this KPI, a negative value, and so a Net Loss, stops the entire process of the certification of sustainability of the business model.

Liquidity Index

With this first analysis we are approaching the KPIs related to assets section and the first one is Liquidity Index, to remember for the reader LI shows the liquidity available in short time compared to the amount of the debt to be paid in the same time span. The historical values assess this KPI around 2.0, this means that the cash available on average for each tyres shop is more than enough to cover the payables of the same time span. This was also true for the 2020, thanks to the special regulation introduced by the government, the tyres shops did not have problems in repay the debts. For the past year, how it is possible to see in the following chart, the Liquidity Index registered a reduction, this was due to more debt asked, how mentioned before, but the liquidity available to cover this surplus of debt is still enough (Table 39).

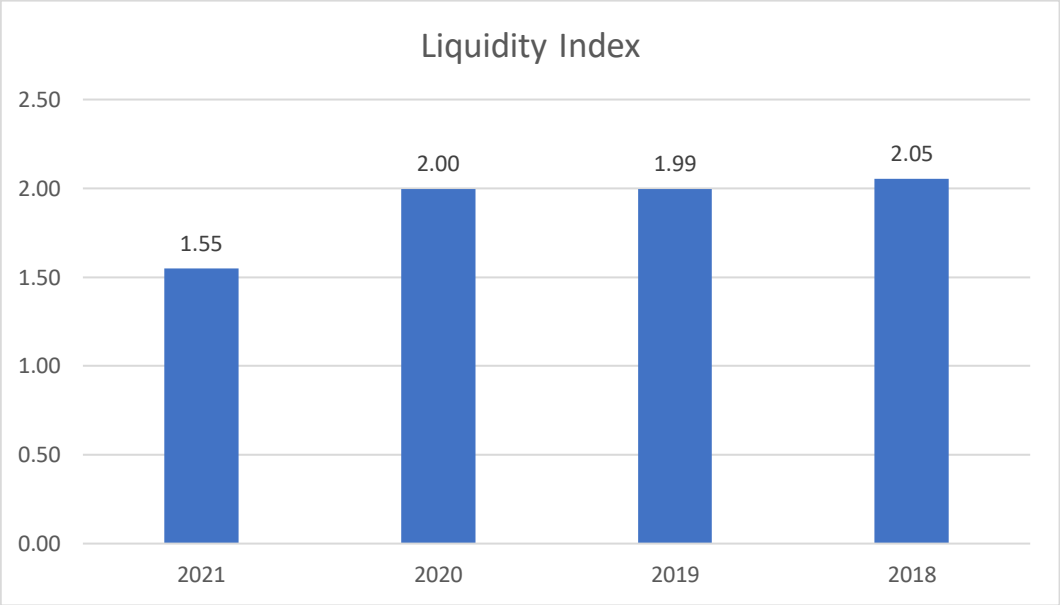


Table 39 Liquidity Index

Having studied the historical trend and behaviour of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the lower limit of each range (Table 40).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	1.20

Table 40 Liquidity Index Evaluation Ranges

Days Sales Outstanding

The second KPI of the Assets section is the Days Sales Outstanding, it is useful to remember that this index shows the average number of days a firm takes to collect the receivable after the sales. From the following chart is possible to see that the historical value was attested around 100 days, during the 2020 there was a slightly increase especially due to the regulation introduced that allowed to pay with a bit of delay without any consequence for the creditors. On the other hand, the past year register a significant decrease, meaning that the tyres shops were able to collect the receivables in less than the half time required in the past (Table 41).

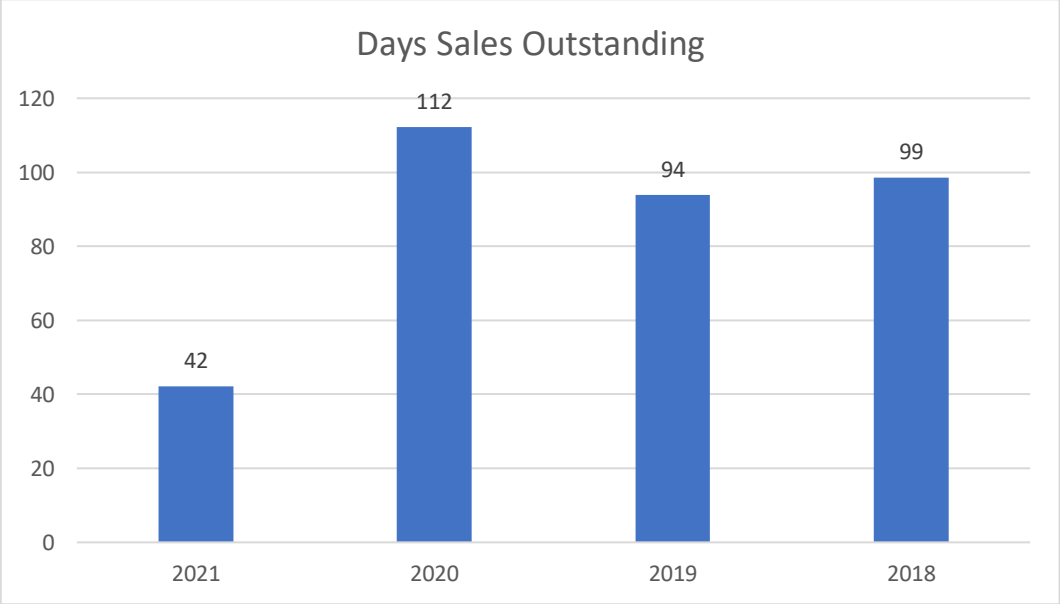


Table 41 Days Sales Outstanding

Once studied the historical trend of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the upper limit of each range (Table 42).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
Low	110	105	100	95	90	85	80	75	70	65	60

Table 42 Days Sales Outstanding Evaluation Ranges

Days Payable Outstanding

This third asset KPI is strictly related to the previous one, indeed Days Payable Outstanding shows the average days that a company takes to pay its bills and invoices to its suppliers, vendors or third parties. Following the same regulation mentioned before, but from the other side, in the last years tyres shops took a bit more days to pay their payables compared to the historical data, but this situation, as the previous one, is destined to return to the normality during the following years (Table 43).

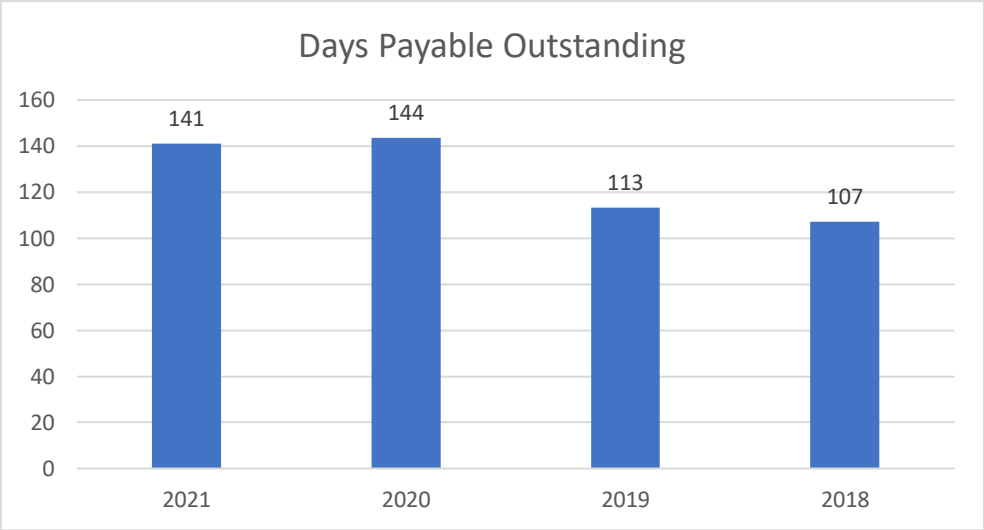


Table 43 Days Payable Outstanding

Having studied the historical trend and behaviour of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the upper limit of each range (Table 44).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
Low	140	135	130	125	120	115	110	105	100	95	90

Table 44 Days Payable Outstanding Evaluation Ranges

Net Financial Position

The next one KPI analysed is the Net Financial Position, in short terms it is an indicator of the financial conditions of the tyres shop referring to its degree of liquidity and cash equivalents. This KPI must be read carefully because it is computed and showed using the accounting signs, so minus for the revenues or cash inflows and plus for costs and cash

outflows, but to easily read the following graph it was applied a change in the sign, in this way the chart could be read intuitively, where the plus sign is associated to good performances and the minus with bad ones. Finally, ss it is possible to see in the graph, there is not an historical value as reference, there were too many variables that comes in planning when defining this KPI, the only observation that could be made is that it was positive, and this showed a high degree of liquidity. The computation of the last year showed a negative value, meaning that, on average, the tyres shops were more financially rigid, this was due to the increasing of debt (Table 45).

Moreover, this situation is destined to return to the normality, signing future positive values.

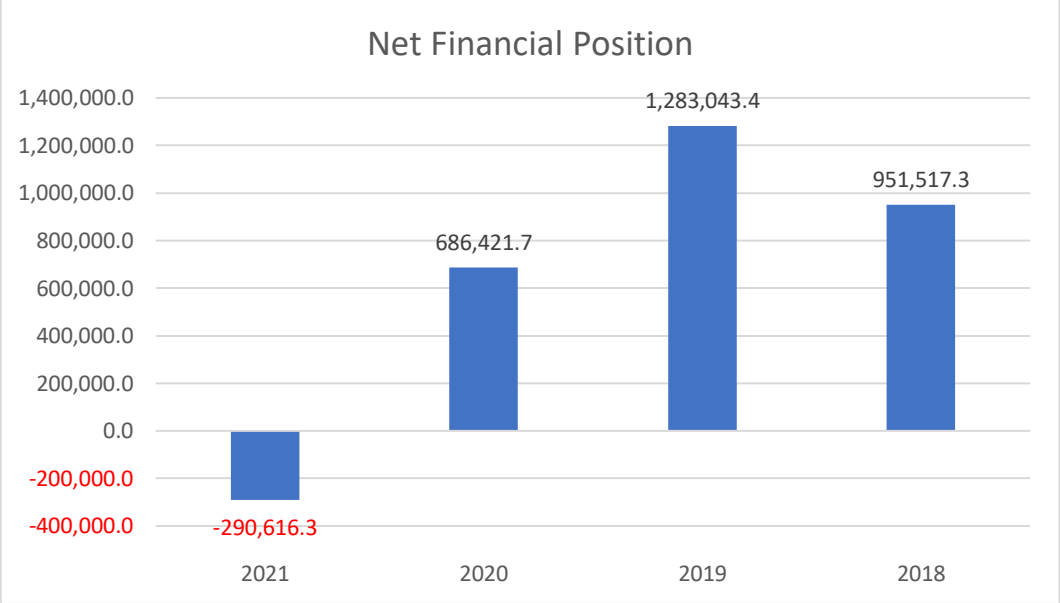


Table 45 Net Financial Position

For this KPI, as previously said for the Value of Production and the Net Income, it is not possible to define a scale of evaluation, what must be remarked is the sign, it should be negative.

Financial Freedom Index

Once analysed the Net Financial Position, it is possible to study the Financial Freedom Index, it is a measure of the capitalization of the firm computed as the ratio between the net financial position, both MLT and ST, and the net assets. The observations related to the sign of this KPI are the same done for the previous one and so minus for the revenues or

cash inflows and plus for costs and cash outflows, but, even in this case, to easily read the following graph it was applied a change in the sign, and so the chart could be read intuitively, where the plus sign is associated to good performances and the minus with bad ones. Also in this case, from the historical data is possible just to assess the positive sign, whereas for the past year a minus was registered, showing the higher financial rigidity of the car shops (Table 46).

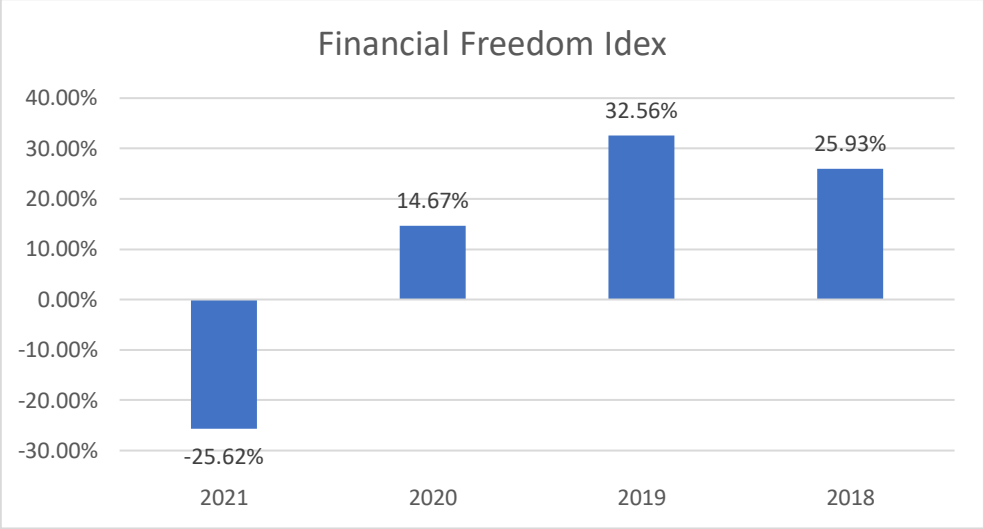


Table 46 Financial Freedom Index

Once studied the historical trend of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the upper limit of each range, treating the value of 2020 as an outlier (Table 47).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
Low	36.0%	35.0%	34.0%	33.0%	32.0%	30.0%	28.0%	26.0%	24.0%	22.0%	20.0%

Table 47 Financial Freedom Index Evaluation Ranges

Net Financial Position Over Revenues Index

With the Net Financial Position Over Revenues Index we are approaching the section related to the financial aspect of the tyres shops. It could be found useful to the reader a remind, this KPI is a measure of the equilibrium between how the firm is financed in BT and MLT and the revenues generated, dealing with the NFP it is necessary to remind, also, that the minus sign represents the normal situation, whereas the plus shows an increase in the

debt asked. To make readable the following graph it was necessary to change the sign, having all this in mind it is possible to study the historical values that show a "normal situation", on the other hand the two Covid related years show firstly an increase but a still positive value and finally for the 2021 a negative one, highlighting the degree of leverage drawn (Table 48).

Even if the decrease showed is consistent, also to this KPI is forecasted a return to the "normality" in a couple of years.

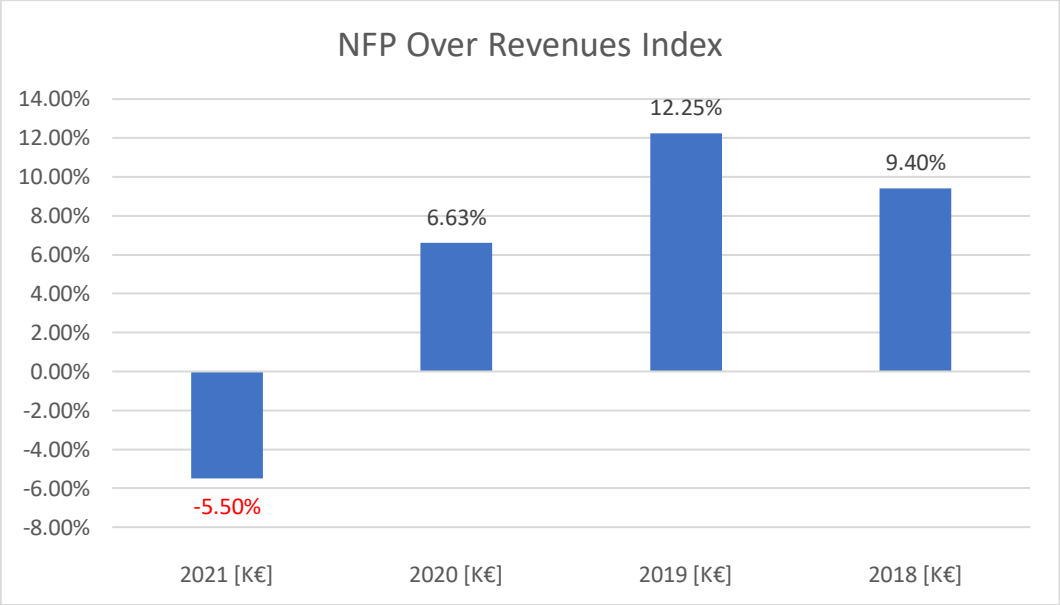


Table 48 NFP Over Revenues Index

Having studied the historical trend and behaviour of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the upper limit of each range, treating the value from the 2020 as an outlier (Table 49).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
Low	80.0%	75.0%	70.0%	65.0%	60.0%	55.0%	50.0%	45.0%	40.0%	35.0%	30.0%

Table 49 NFP Over Revenues Index Evaluation Ranges

MLT Horizontal Financial Equilibrium

The next KPI analysed, the Horizontal Financial Equilibrium, shows the sources of financing on the MLT. The historical values assessed this KPI around 3.0, meaning that in the long

term the assets and the business, in more general terms, were strongly financed. The two years related to the Covid crisis show a significant decrease in this KPI, especially for the 2021, showing that the owners of the tyres shops, leaded by the general trend of the reference market, were more focused in the short term. To signal a good health state of the business this KPI must be higher than 1.0, and this is true also for the 2021, but comparing this value with the historical data it is showed how really delicate was the last year for the tyres shop. As already said for other KPIs, this situation is intended to return to the normality in the next years (Table 50).

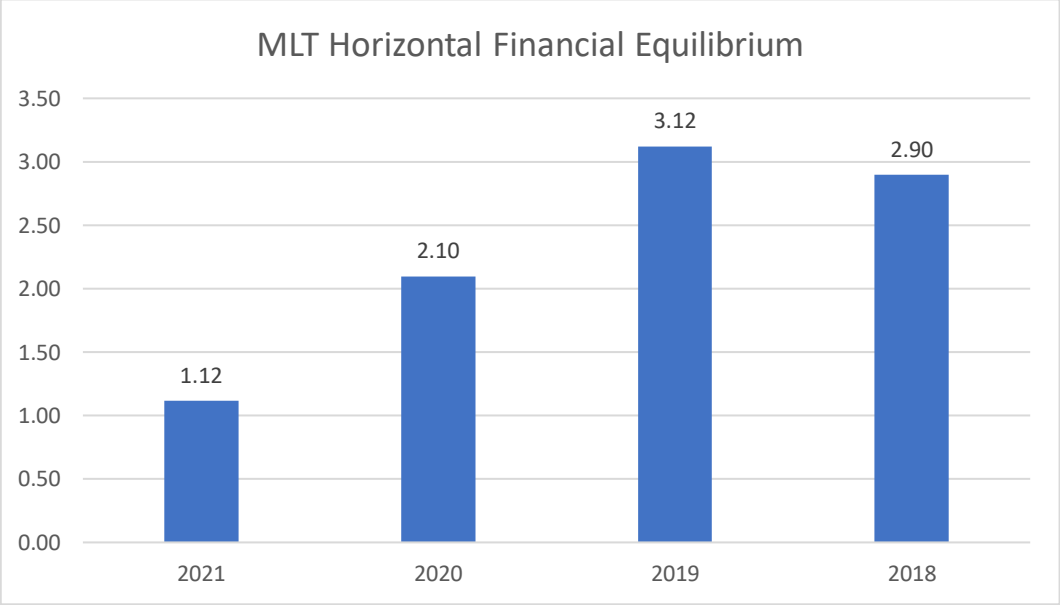


Table 50 MLT Financial Equilibrium

Having studied the historical trend and behaviour of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the upper limit of each range (Table 51).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.90	1.00

Table 51 MLT Financial Equilibrium Evaluation Ranges

Contribution/Tax Regularity Index

The last asset's KPI is the Contribution/Tax Regularity Index, it is useful to remember that it is a measure of social security with respect to the cost of labour. As it is easily possible to

see from the following graph, this index dramatically grew up in the last two years meaning that the social securities are becoming heavier and heavier to the tyres shops. This phenomenon could be explained referring to the, already many times cited, regulation of the Italian government that allowed to reduce the cost of labour recurring to the payroll subsidies, in this way the cost of labour was partially sustained by the Italian State itself, lowering the cost for the employers (Table 52).

This KPI, also, is intended to decrease in the following years backing on truck with an average value of 1.70%.

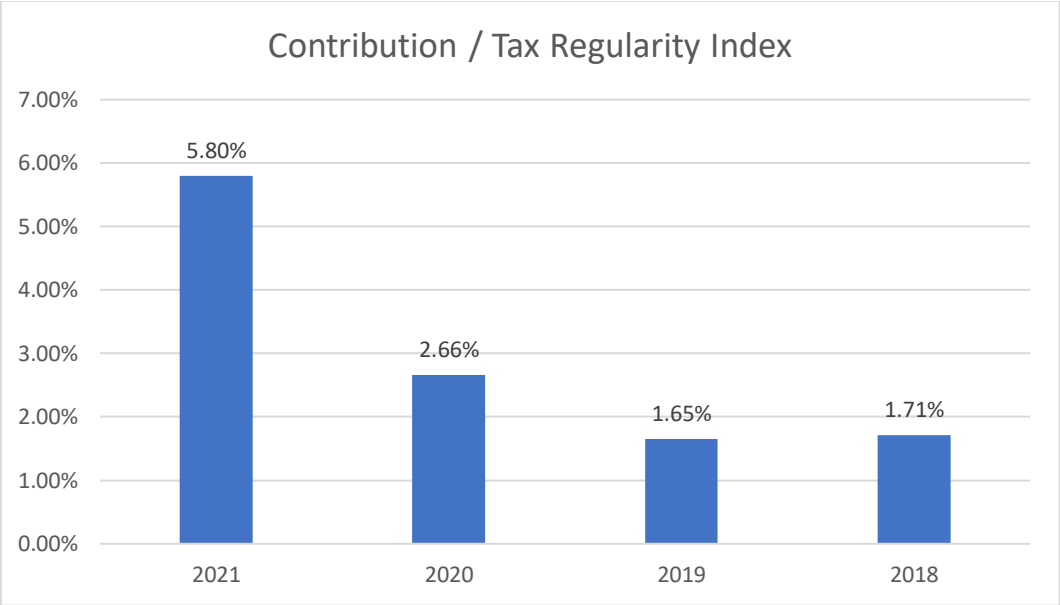


Table 52 Contribution / Tax Regularity Index

Once studied the historical trend of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the lower limit of each range (Table 53).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
Low	8.00%	7.75%	7.50%	7.25%	7.00%	6.75%	6.50%	6.25%	6.00%	5.75%	5.50%

Table 53 Contribution / Tax Regularity Index Evaluation Ranges

Time to Repay Financial Debts

The next KPI analysed is the Time needed to repay the Financial Debt, it shows how much time the tyres shop needs to repay the entire debt drawn. Following the reasonings already

done, it is obvious that this time increased and it is forecasted to back on truck in the following years reaching the ideal value of being lower than 3 years (It is important to not forget the sign related to NFP and consequent change to make more readable the chart) (Table 54).

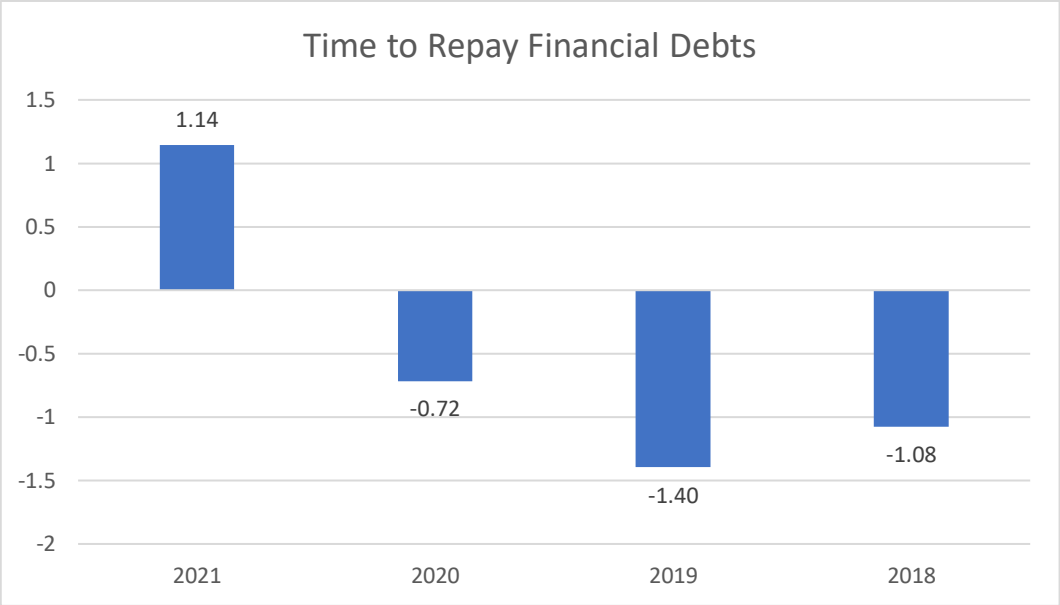


Table 54 Time to Repay Financial Debts

Once studied the historical trend of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, taking into account that the last year is considered as an outlier. In the table is showed the upper limit of each range (Table 55).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
Low	8.0	7.5	7.0	6.5	6.0	5.5	5.0	4.5	4.0	3.5	3.0

Table 55 Time to Repay Financial Debts Evaluation Ranges

Percentage of Current Cash Flow

The next one KPI analysed is the Percentage of Current Cash Flow compared to all revenues generated. To study this index is it useful to remind that higher it is, better is operating the tyres shop, having this idea in mind the following graph could be read.

The chart shows alternating values, for the first year it was registered a negative value, meaning that the outflows were higher than the inflows, for the next two years it was

registered a quite similar positive values and for the last year a boom was registered, reaching more than the 50%. This former case needs a deeper analysis because apparently it shows a completely differ situation of what showed by all previous KPIs. The reason of this exponential growth lays in the use of debt, having at disposal more money coming from the bank, it is possible to use this cash to cover the operating costs, leading to a saving in the revenues spend along the core processes, so a higher value of our index (Table 56).

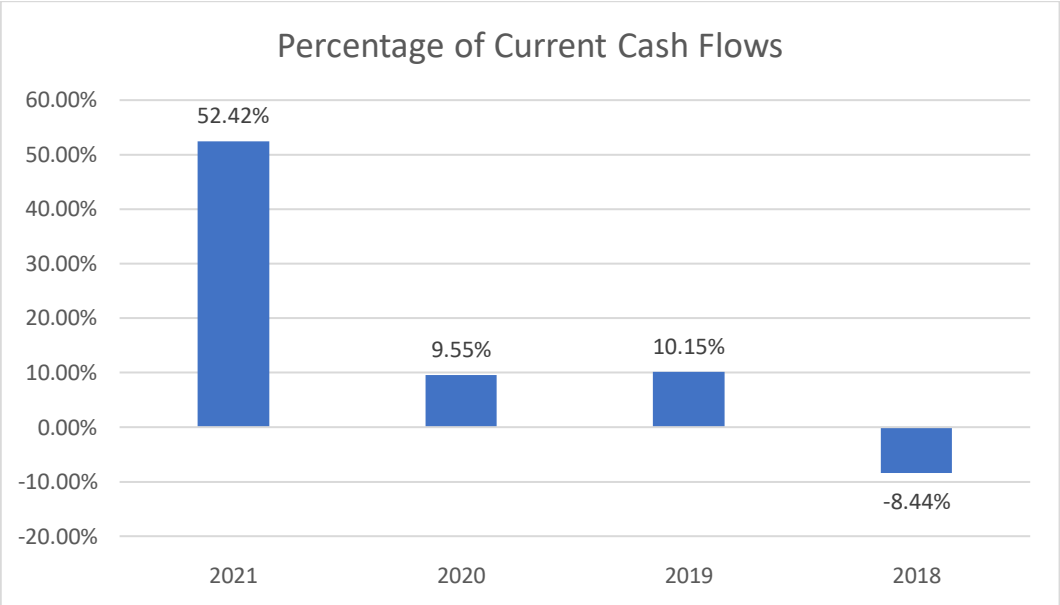


Table 56 Percentage of Current Cash Flows

Having studied the historical trend and behaviour of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is referred to the 2021, taking into account that the last year is considered as an outlier. In the table is showed the upper limit of each range (Table 57).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	-4.5%	-0.5%	2.5%	5.0%	6.5%	7.5%	8.0%	8.5%	9.0%	9.5%	10.0%

Table 57 Percentage of Current Cash Flows Evaluation Ranges

Surplus – Deficit to Revenues

The next KPI is the ratio between the surplus or deficit and the total revenues, this index shows a behaviour like the trend of the previous KPI, it is quiet low for the first three years and during the last one it explodes, reaching more than the 50%. As matter of fact the

reasons behind this trend are the same illustrated before due to the fact that the value of the current cash flows is now used as numerator when defining this index (Table 58).

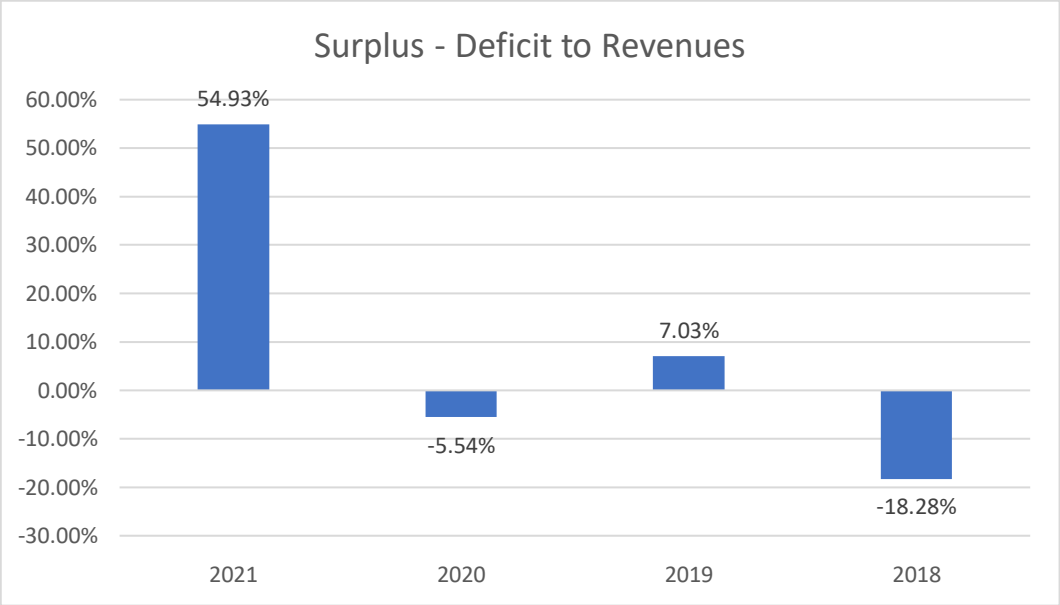


Table 58 Surplus - Deficit to Revenues

Once studied the historical trend of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, taking into account that the last year is considered as an outlier. In the table is showed the lower limit of each range (Table 59).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	-4.25%	-2.25%	-0.75%	0.50%	1.25%	1.75%	2.00%	2.25%	2.50%	2.75%	3.00%

Table 59 Surplus - Deficit to Revenues Evaluation Ranges

Employed Work Force Productivity

With the previous indicator the section related to the asset KPI was closed, now we can introduce the section related to the productivity of the tyres shops starting from the Employed Work Force Productivity, this index is a measure of the Added Value compared to the Cost of Labour. The historical values attested the average around the 1.50, and, as could be easily forecasted in period of recession, during the last two years a decrease was registered. The causes are not so easy to discover, a first factor could be the increase of the cost of labour, but following what said before, there was a general aid from the State in

covering this kind of cost. The other factor could be reduction of the value added but this is really difficult to prove, especially in a market segment with low innovation rate. Anyway, also for this KPI is forecasted a return to the normality in following years, probably with a lower value of what suggested by the historical values due to the general crisis of the raw materials and the always higher cost of the energy (Table 60).

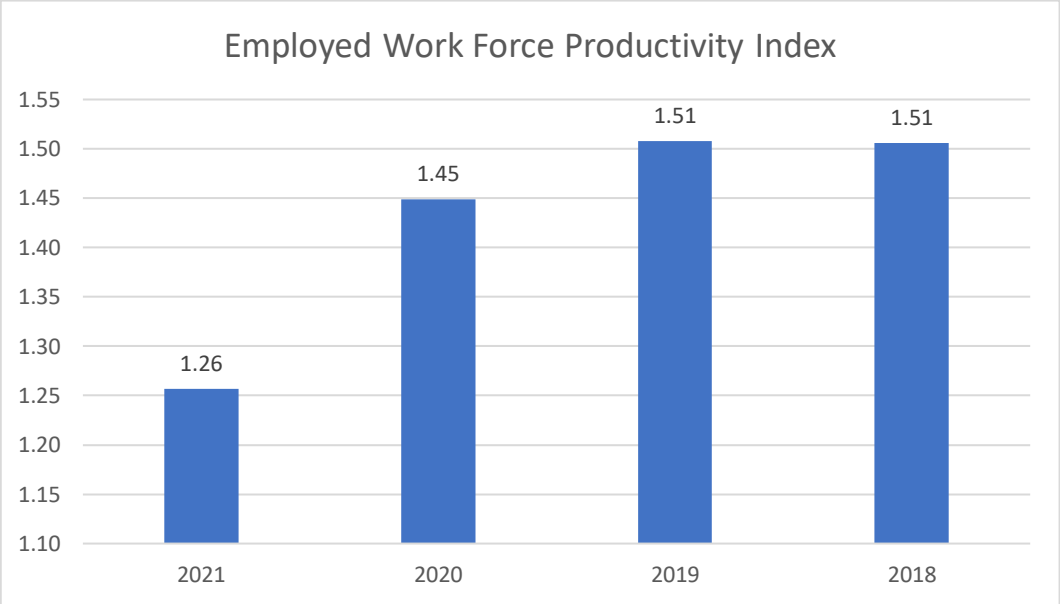


Table 60 Employed Work Force Productivity Index

Having studied the historical trend and behaviour of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the lower limit of each range (Table 61).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	1.050	1.075	1.100	1.125	1.150	1.175	1.200	1.225	1.250	1.275	1.300

Table 61 Employed Work Force Productivity Index Evaluation Ranges

Plant Productivity Index

Following the productivity of the employees, the next KPI analysed is the Plant Productivity Index, it is useful to remind that it is a measure of the productivity in term of First Margin compared to the Structural Cost sustained. The historical values assessed the average around the 1.15, and, as said for Employed Work Force Productivity, during the last two years a decrease was registered. Also, in this case the causes are not so easy to discover,

and the same reasoning done previously is still valid. For the following years a return to the normality is expected with a bit lower average then in the past (Table 62).

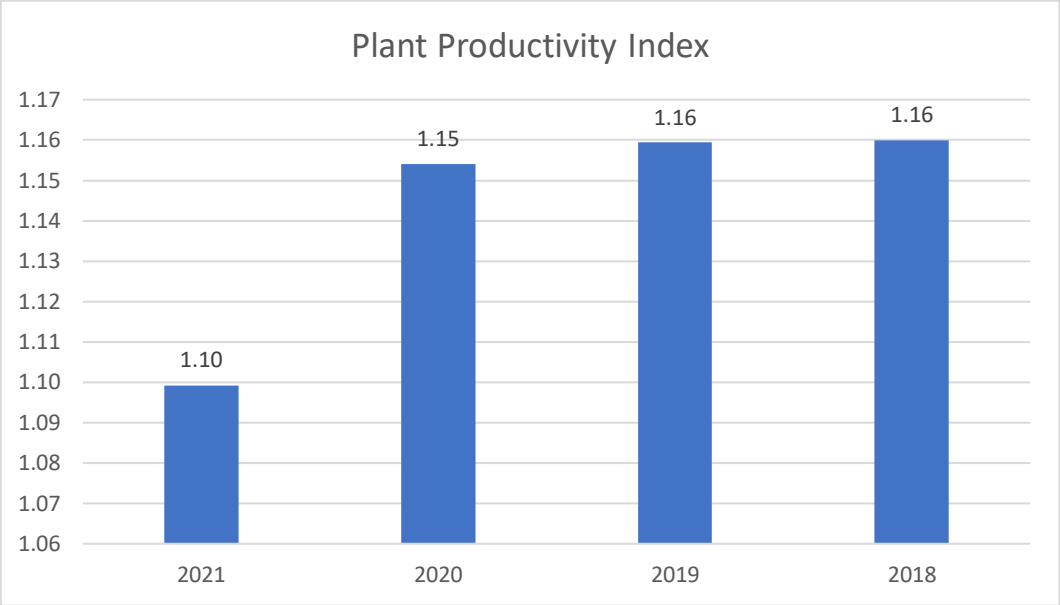


Table 62 Plant Productivity Index

Once studied the historical trend of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the lower limit of each range (Table 63).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	0.975	0.990	1.005	1.020	1.035	1.050	1.050	1.065	1.080	1.095	1.125

Table 63 Plant Productivity Index Evaluation Ranges

Tyres Markup

The next one KPI is related to the markup charged on the sale of the tyres to the client. The historical data shows an average of a bit more than 50%, as it is possible to see from the following chart, but for the last a dramatically decrease was registered, suggesting that each tyre was sold at a price lower than its cost for the tyres shop itself. The explanation of this so peculiar situation could be found in the denominator of the ratio through which this index is defined, especially in the second member of the denominator, indeed, to face the Covid crisis period, tyres shops decreased a lot the tyres acquired, deciding to largely use

their own inventory, and so decreasing their stocks. This leads a negative denominator and so a negative tyres markup (Table 64).

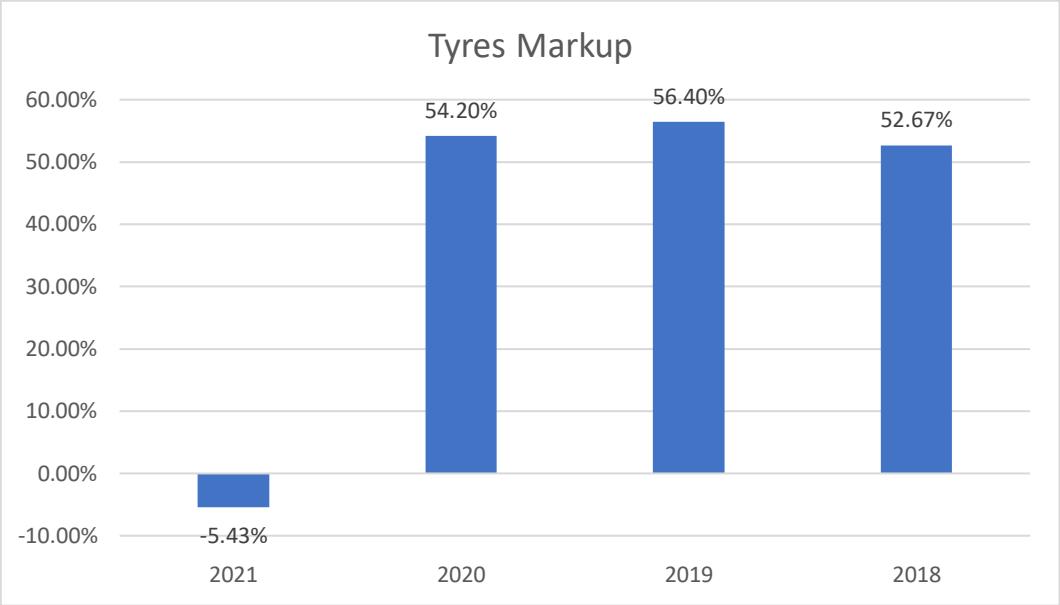


Table 64 Tyres Markup

Having studied the historical trend and behaviour of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, and, as already many times done, treating the 2020 as an outlier. In following table the value showed is the lower limit of each range (Table 65).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	3.0%	4.5%	6.0%	7.5%	9.0%	10.5%	12.0%	13.5%	15.0%	16.5%	18.0%

Table 65 Tyres Markup Evaluation Ranges

Breakeven Point

With the Breakeven Point we are now approaching the section related to the Elasticity. This KPI is one of the most important because, just to remember, it shows how much time is required by a tyres shop to cover its annual cost and starts to gain. It is quite easy to predict that in this period of recession any firm needs a bit more time, leading to an increase of this KPI. This predictable behaviour is showed in following graph, but the increase registered is not so high, it is just 3 percentage points higher than the average of the

historical values. This not so deep increase was largely due to the many aids given by the Italian government during the last two years (Table 66).

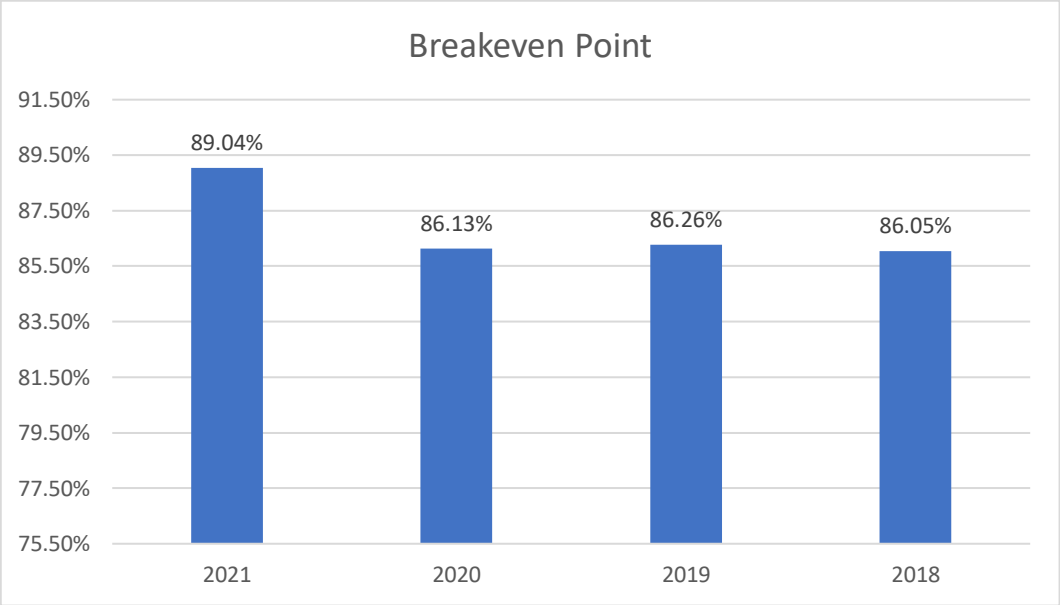


Table 66 Breakeven Point

Once studied the historical trend of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the upper limit of each range (Table 67).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	103.0%	101.5%	100.0%	98.5%	97.0%	95.5%	94.0%	92.5%	91.0%	89.5%	88.0%

Table 67 Breakeven Point Evaluation Ranges

Assets Elasticity

The next one KPI analysed is the Assets Elasticity, it is useful to remember that this index is a measure of the reactivity to act of the tyres shop when external conditions change rapidly. How it is possible to see from the following graph the historical values show a quite high degree of elasticity, meaning that the tyres shops were able to face rapidly the change in the external condition. During the last two years this elasticity decreased a lot, for the 2021 it was a registered around 1/3 of the historical average, showing the huge difficulties to face the changing in future with the actual conditions. This KPI is destined to grown in

following but make an accurate forecast is difficult due to the dynamic nature of this KPI (Table 68).

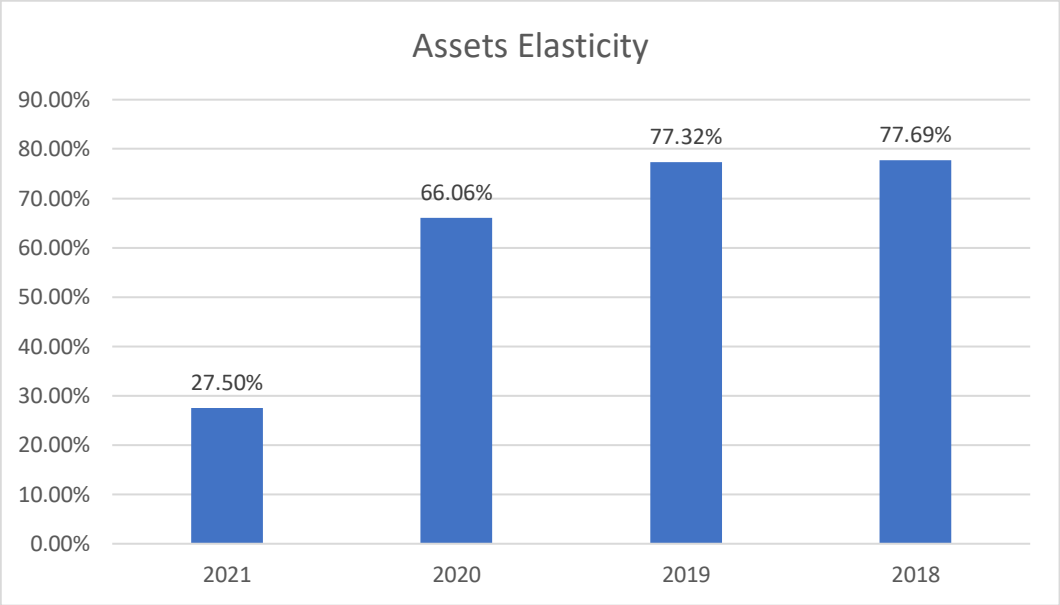


Table 68 Assets Elasticity

Having studied the historical trend and behaviour of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the lower limit of each range, taking in consideration that the last could be considered as outlier (Table 69).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	10.0%	15.0%	20.0%	25.0%	30.0%	35.0%	40.0%	45.0%	50.0%	55.0%	60.0%

Table 69 Assets Elasticity Evaluation Ranges

Managerial Responsiveness Index

The next one KPI is the Managerial Responsiveness Index, it is useful to remind that it shows a measure of how the managerial actions and choices impacts on the total Revenues along the years. As said in the previous section, and how it is possible to see in the following chart, there is not value for the first year of analysis 2018, this is due to definition itself of this index. Looking at the graph what is important to highlight is that in the 2021 a positive value was registered, this means that, even if that year was marked by a deep crisis, the entrepreneurs were acting on the right direction, in order to steer and try to recover what

lost, starting grown again. One of the most important reasons behind this behaviour is the deep knowledge of the business and experience of the tyres shops' managers. As regards the historical values is better to not express any judgement, to have a clearer idea much more date should be collected and analysed (Table 70).

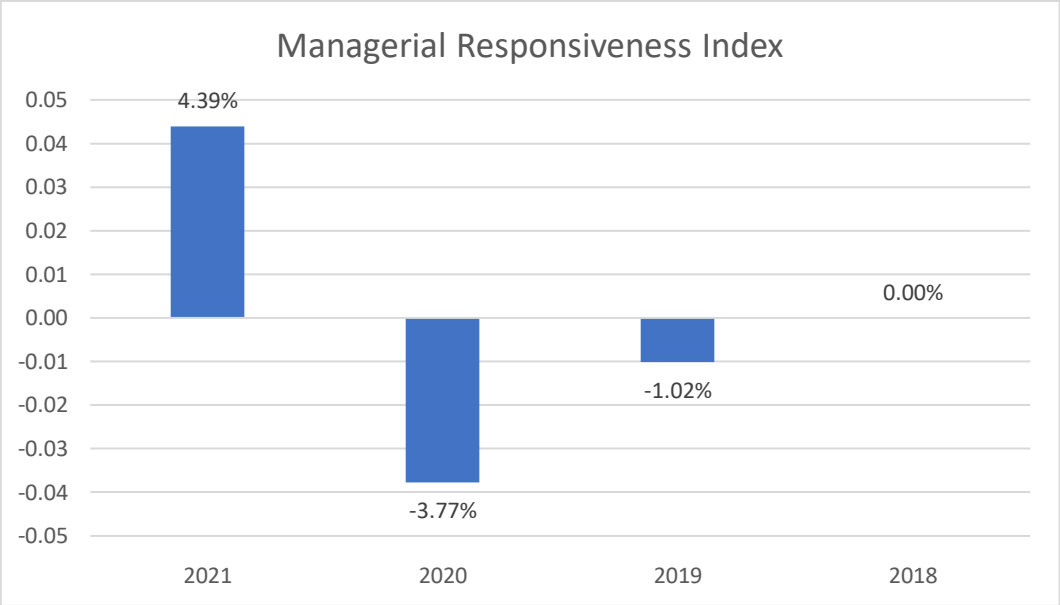


Table 70 Managerial Responsiveness Index

Once studied the historical trend of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the lower limit of each range (Table 71).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
High	-25.0%	-20.0%	-15.0%	-10.0%	-5.0%	0.0%	5.0%	10.0%	15.0%	20.0%	25.0%

Table 71 Managerial Responsiveness Index Evaluation Ranges

Operating Leverage Sensibility to Volume

The next KPI analysed is the Operating Leverage Sensibility to Volume, it is useful to remember that this index is measure of the tyres shop's ability to well stand the elasticity of demand with respect to Pricing Policies, it also useful to say that this value should be the lowest possible. As could see from the following graph, the historical values are around an average of the 13.8%, and only for the last year it was registered a good decrease, meaning that the tyres shop are replying to the demand in right way. Going on in the years it is

forecasted an increase, reaching someway the historical values, this is due to the nature of the market itself which always moves to the balance between demand and supply (Table 72).

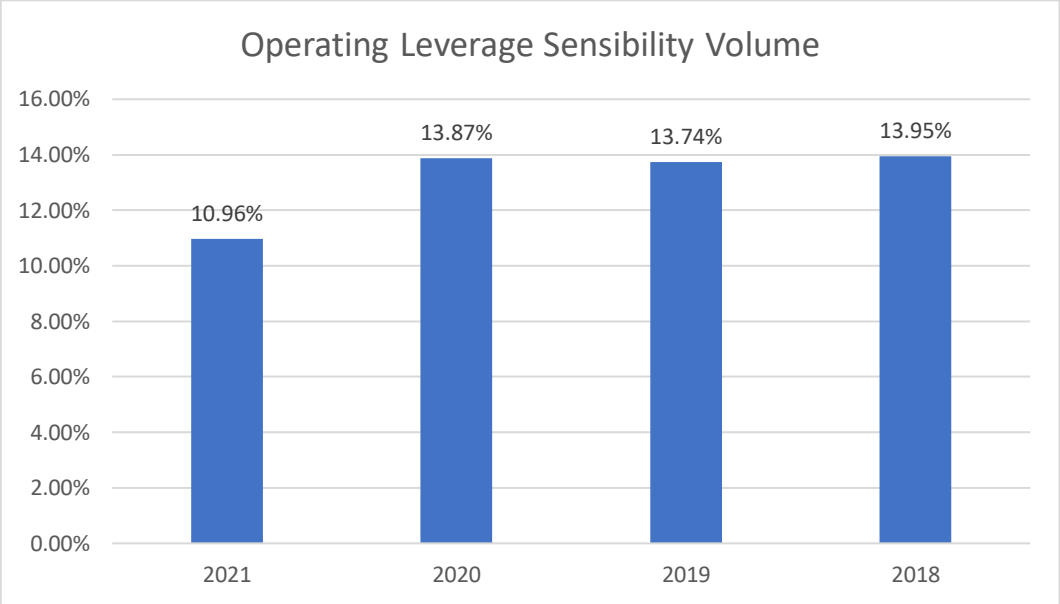


Table 72 Operating Leverage Sensibility Volume

Having studied the historical trend and behaviour of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the upper limit of each range (Table 73).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
Low	19.0%	18.5%	18.0%	17.5%	17.0%	16.5%	16.0%	15.5%	15.0%	14.5%	14.0%

Table 73 Operating Leverage Sensibility Volume Evaluation Ranges

Operating Leverage Sensibility to Price

The next one KPI is the Operating Leverage Sensibility to Price, as also the name suggests it is really similar to the previous index, the difference lays in the aspect with respect to the elasticity is computed, with this indicator the measure is done using the price as discriminator. As could see from the following chart, the historical values assessed the average around the 5.7%, and then followed and up and down, the reasons behind this type of trend are not so tricky to identify, but for the next years what is forecasted is a

slightly increase to the historical values, also in this case due to the balanced nature of the market (Table 74).

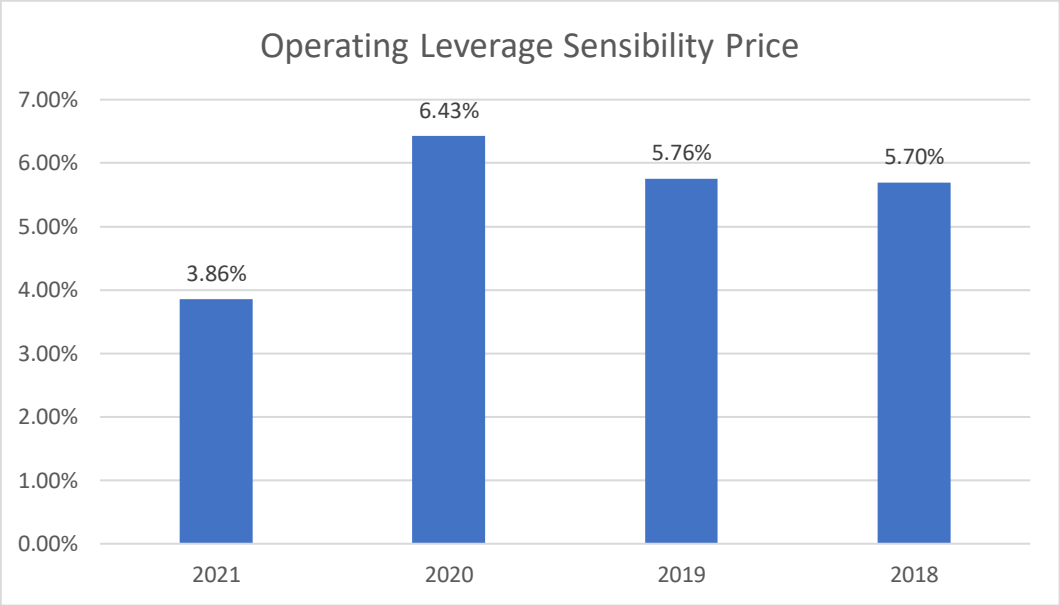


Table 74 Operating Leverage Sensibility Price

Once studied the historical trend of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the upper limit of each range (Table 75).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
Low	11.0%	10.5%	10.0%	9.5%	9.0%	8.5%	8.0%	7.5%	7.0%	6.5%	6.0%

Table 75 Operating Leverage Sensibility Price Evaluation Ranges

Income Self – Financing

The last but not the least KPI analysed is the Income Self-Financing, it is a measure of the tyres shop's attitude for self-financing future investments, it could be the highest possible, but, in period of crisis, is intuitive to register a decrease, and this is exactly what is showed in following graph. Something that needs to be highlighted is the average of the historical values, which shows a really good attitude by the business owners to fund their future investments using the Net Result (Table 76).

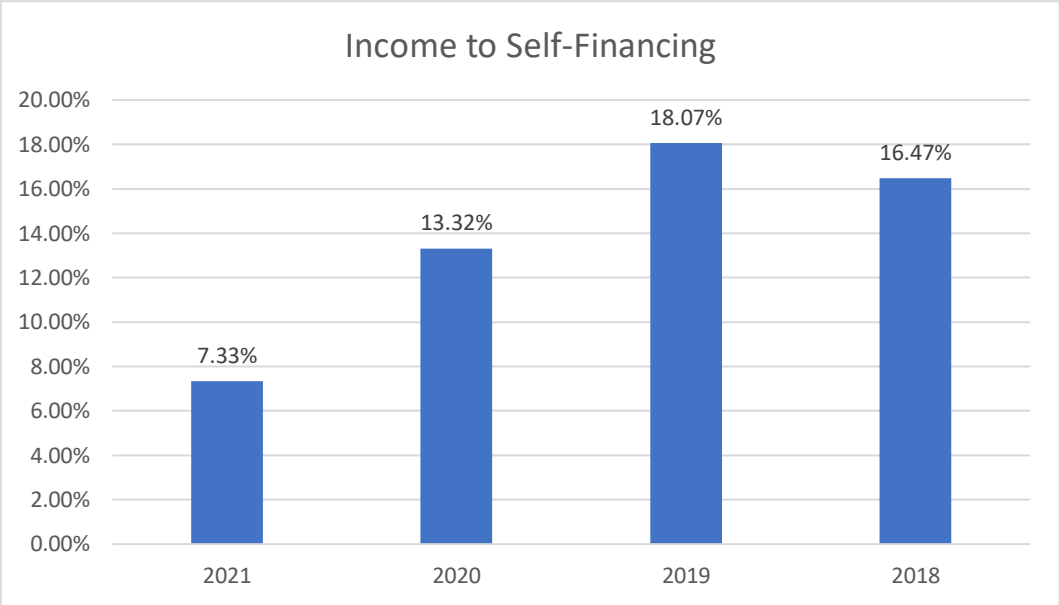


Table 76 Income to Self-Financing

Having studied the historical trend and behaviour of the market and especially what happened in the last two years, it is now possible to define the scale of evaluation with respect to this KPI, also in this case what is showed in the following table is just referred to the 2021, where the value showed is the lower limit of each range (Table 77).

Evaluation Principle	0	1	2	3	4	5	6	7	8	9	10
Low	10.0%	10.5%	11.0%	11.5%	12.0%	12.5%	13.0%	13.5%	14.0%	14.5%	15.0%

Table 77 Income to Self-Financing Evaluation Ranges

Conclusion

After the analysis of the entire set of the KPIs, what emerges is that the market is facing a period of largely contraction, the two years, marked by the Covid-19, show not really good performance indicators, highlighting how deep is this crisis. Anyway, it, also, emerges that the tyres shops analysed have all papers in order to brilliantly overcome this period, they show a strong and solid fundings for the next years and a high enough degree of elasticity, all this allows to make optimistic expectations for the future. As it was highlighted, the last two years were not tricky to face, but the return to the normality, hopefully, has started, leading to increasing performances of tyres shop. For sure the path to the completely recover what lost is still long, but this journey has already started.

As regards our project, all this thesis work could be seen as just a summary of what did until now, also in this case the path to establish a model for the evaluation of the sustainability of the business model is still long, what done for the Organizational Quality, Satisfaction of the Legal Requirements, and for the Economic and Financial Solidity Evaluations is still a working in progress, the professor and the team are continuously working to fine tune this type of disciplinary to fulfil the all possible needs of the market.

Annexes

Aggregated Income Statement

Income Statement	2021 [K€]	2020 [K€]	2019 [K€]	2018 [K€]
Total Revenues	5,283,795.0	10,356,818.7	10,476,716.9	10,119,405.9
From sales of Tyres	2,508,388.5	7,863,166.7	8,321,486.0	8,277,275.6
From sales of Tyres related Service	751,987.0	443,536.0	186,966.0	0.0
From Deposits Account	97,367.0	81,784.0	22,555.0	0.0
From Mechanical Operations	0.0	0.0	0.0	47,939.8
From Car Windows	51,719.0	108,290.0	8,587.0	0.0
From Car Inspection Centre	0.0	0.0	0.0	0.0
From Other	1,874,333.5	1,860,042.0	1,937,122.9	1,794,190.5
Cost of Goods Sold	-3,425,197.9	-5,556,100.9	-6,085,933.5	-5,987,574.8
Δ Inventory	-152,946.2	-225,725.8	186,810.0	221,167.0
Tyres Purchases	-2,499,340.3	-4,873,550.5	-5,507,526.6	-5,642,708.3
Spare Parts and Consumables Purchases	-117,985.7	-97,490.6	-172,429.5	-130,779.5
Windows Purchases	-13,447.0	-30,691.0	-2,991.0	0.0
Inspection Costs	-24,651.0	-375.0	0.0	0.0
Other Purchases	-616,827.7	-328,267.9	-589,796.4	-435,254.0
First Margin	1,858,597.1	4,800,717.9	4,390,783.4	4,131,831.2
Structural Cost	-615,689.6	-1,703,312.5	-1,660,385.6	-1,502,352.3
Passive Rent	-190,995.9	-606,556.8	-603,728.4	-570,601.5
Consulting	-171,023.0	-45,593.0	-17,990.0	-35,097.0
Utilities	-55,116.5	-54,426.1	-43,247.7	-42,558.6
Bank Charges	-31,123.1	-30,081.6	-23,281.2	-20,431.1
Other Operative Costs	-167,431.1	-966,655.0	-972,138.4	-833,664.1
Added Value	1,242,907.5	3,097,405.4	2,730,397.8	2,629,478.8
Labour Cost	-988,843.6	-2,138,181.1	-1,810,690.3	-1,745,887.7
of which Direct Labour Cost	-647,181.3	-592,778.2	-513,414.4	-489,476.1
of which Advance on Severance Pay (DLC)	-21,458.4	-89,441.8	-84,009.1	-79,930.2
of which Indirect Labour Cost	0.0	0.0	0.0	0.0
of which Advance on Severance Pay (ILC)	-13,048.0	-12,398.0	-6,680.0	-7,312.0
of which Other Personnel Costs	-224,877.9	-1,380,341.2	-1,185,949.2	-1,153,124.5
Third Working Operations	-13,510.1	-6,617.8	-833.7	-1,065.0
Administration	-68,768.0	-56,604.0	-19,804.0	-14,980.0
Gross Operating Income (EBITDA)	254,063.9	959,224.3	919,707.5	883,591.1
Depreciations / Provisions / Write-Dows	-50,304.0	-293,255.7	-316,604.9	-307,095.3
of which Buildings Depreciation	-28,312.0	-38,717.8	-34,356.9	-34,140.9
of which Technical Depreciation	-21,992.0	-210,881.0	-237,015.0	-262,075.5
Gross Operating Result (EBIT)	203,759.9	665,968.6	603,102.6	576,495.8

Financial Result	-36,020.1	-24,886.8	434.2	-7,031.1
of which Passive Interest	-32,178.4	-36,457.2	-9,544.9	-9,514.1
of which Passive Interest on Leasing	0.0	0.0	0.0	0.0
of which Active Financial Proceeds	-3,841.7	11,570.5	9,979.1	2,483.0
Extraordinary Results	-9,339.0	39,201.8	-626.6	-8,692.8
Ante-Tax Income	158,400.7	680,283.7	602,910.2	560,771.9
Taxes	-28,049.0	-142,598.0	-114,390.0	-105,149.0
Net Income	130,351.7	537,685.7	488,520.2	455,622.9
Notional Taxes	0.0	0.0	0.0	0.0

Managerial Responsiveness Index Extended Computation

	2021 [M€]	2020 [M€]	2019 [M€]	2018 [M€]
Total Variable Cost	-3,425.1	-5,556.1	-6,085.9	-5,987.6
Total Fixed Cost	-1,654.8	-4,134,8	-3,787,7	-3,555.3
Contribution Margin	1,858.6	4,800.7	4,390.8	4,131.8
Contribution Margin %	35.18%	46.35%	41.91%	40.83%

Notional Taxes	0.0	0.0	0.0	0.0
Rectified EBITDA	254.1	-30.1	-23.3	-20.4
ROL Rectified	254.1	959.2	919.7	883.6

FCcy	1,654.8	4,134.8	3,787.7	3,555.3
FCpy	4,134.8	3,787.7	3,555.3	0.00
ΔCF	-2,479.9	347.1	232.3	3,555.3
Total Revenues cy	5,283.8	10,356.8	10,476.7	10,119.4
Total Revenues py	10,356.8	10,476.7	10,119.4	0.00
Cfue	0.31	0.40	0.36	0.35
Cfub	0.40	0.36	0.35	-
Delta CF da delta volumi	2,025.3	43.3	-125.5	-
ΔCF in Volume	454.6	-390.4	-106.8	-
-ΔCF	2,479.9	-347.1	-232.3	-
Managerial Responsiveness	4.39%	-3.77%	-1.02%	-

Aggregated Balance Sheet

Balance Sheet	2021 [K€]	2020 [K€]	2019 [K€]	2018 [K€]
Intangible Fixed Assets	634,358.8	726,947.8	181,242.0	236,276.2
Tangible Fixed Assets	2,034,698.7	2,008,266.1	1,230,653.1	1,116,561.3
of which Buildings and Lands	1,517,487.0	975,824.0	714,121.2	494,710.0
of which Technical (Installations, Machineries and Equipment)	261,189.8	1,012,126.8	502,892.5	600,487.8
of which Other Assets	256,022.0	20,315.4	13,639.5	21,363.5
Net Operating Fixed Capital	**2,669,057.5**	**2,735,213.9**	**1,411,895.1**	**1,352,837.4**
Severance Pay	**-242,461.6**	**-524,208.6**	**-483,141.4**	**-421,468.4**
Current Inventory	115,084.0	1,246,115.2	1,355,353.0	1,224,393.0
Credits from Clients	744,412.8	3,885,001.1	3,289,476.9	3,335,082.0
Other Operating Credits	152,731.9	192,846.5	167,761.9	151,457.8
of which Tax-Related (Ires + Irap)	13,136.4	12,548.7	8,220.5	14,182.0
of which Other Credits and Active Accruals and Deferrals	66,246.5	141,463.8	158,140.4	158,728.8
VAT Exchequer	73,349.0	38,834.0	1,401.0	-21,453.0
Payables to Supplier	-1,527,643.9	-3,205,344.0	-2,768,867.1	-2,597,475.9
Other Operating Payables	-132,895.8	-292,451.3	-269,375.7	-278,935.9
of which as Social Security	-34,996.7	-30,835.3	-26,015.7	-26,823.7
of which Tax-Related (Ires + Irap)	-23,952.9	-29,874.8	-5,821.1	-4,829.7
Other Operating Payables	-60,485.3	-218,280.1	-237,539.0	-247,282.5
Funds to Risks and Charges	-13,461.0	-13,461.0	0.0	0.0
Net Operating Working Capital	**-648,311.0**	**1,826,167.5**	**1,774,349.0**	**1,834,521.0**
Operating Net Invested Capital	**1,778,285.0**	**4,037,172.9**	**2,703,102.8**	**2,765,890.0**
Share Capital	188,920.0	287,920.0	267,057.1	267,057.1
Reserves + Previous Years Profits	814,874.2	3,853,596.1	3,184,617.1	2,947,335.5
Net Income	130,351.7	537,685.7	488,520.2	455,622.9
Net Assets	**1,134,145.9**	**4,679,201.8**	**3,940,194.4**	**3,670,015.5**
Shareholders Financing and Withdrawal	353,523.7	44,391.7	45,951.7	47,391.7
Financial Debts BT	3,168.0	85,120.0	504,320.0	0.0
Financial Debts MLT	1,849,977.3	1,056,326.7	467,335.3	247,966.8
Financial Activities	-1,562,529.0	-1,827,868.4	-2,254,698.6	-1,199,484.1
Net Financial Position	**290,616.3**	-686,421.7	-1,283,043.4	-951,517.3
Net Operating Acquired Capital	**1,778,286.0**	**4,037,171.9**	**2,703,102.8**	**2,765,890.0**

Operating Assets from Aggregated Balance Sheet

Balance Sheet	2021 [K€]
Intangible Fixed Assets	634,358.8
Tangible Fixed Assets	2,034,698.7
Inventory	115,084.0
Credits from Clients	744,412.8
Other Operating Credits	152,731.9
Operating Assets	**3,681,286.2**

References

- Libby, Libby, Short - Financial Accounting, 7th edition, Mc Graw Hill Irwin
- Ross, Westerfield, Jaffe - Corporate Finance, 10th edition, Mc Graw Hill
- Grant – Contemporary Strategy Analysis, 7th Edition, John Wiley and Sons Ltd
- https://www.accredia.it
- https://www.mise.gov.it
- https://www.giornaledellepmi.it
- https://www.asseverazionitalia.it
- http://www.treccani.it
- https://www.laleggepertutti.it
- http://www.agenzia50.it
- https://tuaimpresa.net
- https://www.ig.com
- https://www.borsaitaliana.it
- https://www.ionos.it
- https://dizionarioeconomico.com
- https://ilsole24ore.com
- https://www.investopedia.com
- https://quifinanza.it
- Thesis of Santaniello Matteo

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