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"EARNINGS MANAGEMENT: AN EMPIRICAL ANALYSIS OF ITALIAN WINERY COMPANIES"

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Introduction

This thesis examines earnings management practices for a national sample of winery companies in Italy. Starting with the concept of earnings management, Healy and Wahlen (1999, page 368) argue that earnings management:

"occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some shareholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers". [1]

This is one of the most relevant definitions in the earnings management literature. The maneuvering spaces within the accounting principles allow managers a certain freedom in the presentation of some balance sheet items. In fact, executives can quantitatively alter the amount of some items in order to bring out a result different from what it would actually be. Unfortunately, there is no effective method that tells us exactly where and in what instance the so-called "profit manipulations" are present. As is well known after the Enron and WorldCom scandals, discovered by the SEC[2] (Security and Exchange Commission), has led organizations such as FASB (financial accounting standard board) and IASB (international accounting standard board) to restrict even more the accounting discretion granted to managers. However, the problems related to the manipulation of profits in financial reporting have not been completely eliminated. The main reasons may be due to: manager's bonus plans, tax incentives, a non-regular performance of the company in that financial period and compliance with certain profitability capital ratios or to avoid the violation of certain covenant agreements. This could lead to decisions being made on the basis of misstatements information. The allocation of scarce resources turns out to be an issue because stakeholders have to rely on information that is not reliable. It is not the faithful representation of the economic-financial performance of the firm analyzed. Hence, Earnings management plays a significant role in the representation of the firm's performance in financial reporting. In this thesis, the main focus will be to explain whether wineries are likely to manage their earnings to achieve certain level targets. Namely, whether they report a stable growth in revenues, avoiding revenues path with peaks and tumbles and those with negative earnings manage them upward to be above the zero thresholds.

So, this thesis will aim to answer the following hypothesis;

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[1] Paul M. Healy and James M. Wahlen (1999). A Review of the Earnings Management Literature and Its Implications for Standard Setting. pp.6-8.
[2] The Securities and Exchange Commission is the US federal agency responsible for overseeing the stock exchange, similar to the Italian Consob.

- *Italian wineries with small losses manage earnings upward, just above the zero thresholds;*
- *Italian wineries manage earnings to avoid large and negative earnings changes;*
- *There is a significant difference in manage earnings among different size's classes of Italian wineries;*
- *There is a significant difference in manage earnings in Italy between cooperatives and limited companies;*
- *There is a significant difference in manage earnings between wineries of distinct areas of Italy.*

Firstly, this study scrutinizes the literature on earnings management, a strong theoretical review of previous researches and investigations (Healy Model, Standard Jones model (Jones 1991), Modified Jones model (1995) … to the Caylor Model).

In the second chapter, it is going to analyze the characteristics of the Italian wine's market, with particular attention paid to our products, highlighting the importance of Italy's leading role in the wine market, considered together with France, the countries in which there is a strong culture of wine.

Then, the dynamics that affect the markets at an international level will be exposed; which include the import and export of the various countries and the greater propensity for quality.

Without demanding completeness, the features and peculiarities of the Italian wine sector will be sketched, highlighting the difference between organic and non-organic wine sector. In addition, the Italian's wine industry structure will be explained and described, distinguishing the various phases that lead to the distribution of wine to the final consumer, highlighting the preference of some companies that produce high-quality wines for the HO.RE.CA channel, but above all the differences that emerge in a sector characterized by a marked pulverization. It will understand the different economic realities with different legal forms of the winemaking company (small and family-owned companies, cooperatives, partnerships, and corporations).

The study aims to enrich the understanding of earnings management practices in the Italian wineries, a sector with high added value which is the spearhead of the Italian agri-food industry. Hence, in the last chapter, it is going to provide evidence on Italian wineries' earnings management practices which are not explored much in the literature. The methodology adopted in the first analysis is represented by the approach used by Burgstahler and Dichev in 1997, according to which the presence of discontinuity in the frequency of distribution of profits is an indicator of earnings management practices to achieve certain objectives.

The Modified Jones model is going to be applied considered as the most effective and powerful model in detecting earnings management. Subsequently, the analysis will regard the introduction of some control variables in the explanation of the variable we sought "Discretionary accruals" as a proxy of earnings management. Therefore, the multiple regression model will also be applied to the distinction between the different dimensional classes based on the turnover, different types of companies (Cooperatives and Limited companies) and different areas of Italy, highlighting the relative differences in terms of results. To accept or reject the null hypothesis, a T test will be applied to the 95% confidence interval.

1. Theoretical framework of Earnings management

In this chapter, it will be explained the phenomena of Earnings management in all its aspects:

A brief description of Earnings quality to introduce in the next section "1.2" some of the keys definitions of earnings management. An important consideration about "How to manage earnings?".

Executives sometimes manipulate earnings by applying several and different techniques to reach its own aims, because they are incentivized to do so. Therefore, the literature has drawn up a series of several different models to detect earnings (Aggregate accruals, Specific accruals, Distribution of earnings and Discretionary Revenues Models), in which each author can be identified.

1.1 Earnings quality

Earnings quality is considered as a measure of the ability of profits to represent a truthful and correct economic-financial situation of current and future periods.

The quality of the reported earnings is related to the sustainability, predictability, and variability of the future earnings. These are the main temporal properties if the earnings are persistent and predictable, they are considered of high quality. The permanence or persistence of earnings influences the value-relevance of earnings. The term sustainability might and ought to refer to the way in which the reported earnings are consistent with the long-run view of the profitability of the firm. Instead, incomes are predictable or at least the value drivers of the business are comprehensible and faithful when the business model is more transparent, and investors are able to assess the potential flows of the company. To finish, variability consists in non-regular earnings trend, inversely related to the quality of income.

As regards the various components of the reported income, a different weight will be assigned. Depending on the periodicity of incomes, we can have:

- Permanent or recurring earnings, generated from recurring free cash flows, so good predictor of future cash flows (trading income);
- Transitory or fading earnings will disappear in the future, a poor predictor of future cash flows, such as incomes from restructuring activities;

- One-off or random earnings, unrelated with the ordinary business activity, no predictor of future cash flows and no value relevant (one-off governmental grant).

A number of different measurements and statements have been used to evaluate earnings quality in firms. Earnings are of good quality if they do not reverse in the future, in which case they would be induced by accounting methods. If the low-quality earnings are detected, forecasts can be adjusted to anticipate the reversals.

Earnings quality stems from the comparison between the accrual components and cash flows. Some accounting researchers, like Dechow and Dichev (2002), found a relationship between earnings management and earnings quality, arguing that an increase in the level of earnings management practices corresponds a lower level earnings quality and vice versa.

Stringent accounting rules have been drafted so that there is a higher earnings quality. However, managers have still the option to behave in a discretionary way, once they draw up financial reports. This could affect the usefulness of financial statement and mislead in making relevant decisions based on altered information. Therefore, the earnings quality is connected to these topics:

- The information and transparency of the financial performance of the company;
- How significant is the decision based on the information reported in the financial statements?

Hence, to have a better understanding of how earnings management affects earnings quality, in the next sections, a consistent discussion will illustrate and explain the topic in every detail.

1.2 Earnings management definitions

In the existing literature, there are several definitions of earnings management, Watts and Zimmerman (1978) state that "earnings management occurs when managers have a discretionary behavior related to accounting numbers with or without limits and this behavior can be adopted in order to maximize the value of the company". [3]

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[3]Cinthia Valle Ruiz (2015). Literature review of earnings management: Who, why, when, how and what for. https://verkkolehdet.jamk.fi/finnish-business-review/files/2016/03/FBR-2015-5.pdf, (Accessed August 29, 2018).

One of the main definitions of earnings management was given by Schipper (1989, p.92), defined as "the intentional behavior to adjust the financial reports in their external process with the purpose of obtaining a private gain". [4]

However, the main common definition of earnings management used by researchers in this area is: "managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some investors about the underlying financial performance of the firm, or to influence contractual outcomes that depend on reported accounting numbers" (Healy and Wahlen 1999, page 368). [5]

Mulford and Comiskey argue that earnings management is the active manipulation of earnings with the aim of achieving certain results:

- smoother, more sustainable earnings stream;
- a prediction made by analysts;
- manager's personal goals.

According to Mulford and Comiskey (2002), managers use a cookie jar reserves technique to show a constant and straightforward flow of earnings, eliminating concave and convex tendencies. This includes record more expense in the current period to create a reserve of earnings to use in bad years, in order to smooth the earnings stream throughout the fiscal periods. Moreover, this allows the manager to obtain during the various management periods, bonuses related to company performance, which otherwise would have been lost if the company had closed at a loss. The previous definition, however, only considers the negative impact of earnings management.

Some authors argue that earnings management can have positive effects on third parties, since might increase the informativeness of financial reports by transmitting private information to the public; Therefore, it leaves a certain discretion in the process of evaluating the items in the financial statements, in order to have a more accurate and transparent judgment and evaluation in accrual accounting.

There is not a common and exclusive definition of earnings management, this hinges mainly on the background of the study. In international literature, Earnings management is classified into three different clusters:

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[4]Ibidem:https://verkkolehdet.jamk.fi/finnish-business-review/files/2016/03/FBR-2015-5.pdf, (Accessed August 29, 2018).

[5] Paul M. Healy and James M. Wahlen (1999). *A Review of the Earnings Management Literature and Its Implications for Standard Setting.*

- "white or beneficial earnings management", represent the actual performance of the company and signal to the stakeholders, the manager's confidential information about future cash flows;

- "grey and neutral earnings management", the choice to adopt some accounting treatment in an opportunistic manner (maximizing the benefits of management only) or economically efficient;

- "black and pernicious earnings management", is the activity of using tricks to misrepresent or reduce the transparency of the financial statements.

1.3 Earnings management techniques

Managers may use several techniques, the main effectiveness and broadly used can be divided into the following categories:

- Amortization, depreciation and depletion;
- Asset exchange techniques and Sale/leaseback;
- Big Bath techniques;
- Change GAAP;
- Cookie Jar Reserve techniques;
- Flushing the investment portfolio;
- Revenue recognition;
- Use of derivates.

Amortization, depreciation and depletion

The accounting process of allocating the cost of long-term operating assets to expense in a systematic and rational manner to those periods expected to benefit from the use of the asset. Managers, in writing off long-term assets, have to use own judgments in choosing the write-off method, period and estimate the residual value at the end of useful life.

Long-term assets are classified as an expense in the income statement in the following types:

- Depreciation, for tangible assets (equipment, furniture, buildings, and machinery);
- Amortization, for intangible assets (patents and trademarks, goodwill);
- Depletion, for natural resources (natural gas, oil...).
- Change to nonoperating use. This process does not need to record any amortization or depreciation expense.

Asset exchange and sale/leaseback techniques

A sale/leaseback transaction provides an opportunity for managing earnings by recording incomes or losses. Two ways to realize it:

- Sale/leaseback. In this case, losses are directly reported on the seller's income statement; whereas incomes are depreciated in proportion to rental payments or over the life of the assets (operating and capital lease);
- Outright sale. The sale of an asset with a long-term useful life that has unrealized incomes and losses.

Besides that, there is a possibility to dispose of the long-term asset without recording any gain or loss when a similar productive asset is swapped.

Big bath techniques

When companies must bear costs of eliminating or restructuring processes, accounting principle allows accounting a cost as an extraordinary charge. This can have an adverse effect on the present earnings, but it is better to report charges once in order to have in the years later a less burdened earnings. Therefore, big bath strategy allows charging more when there are some doubts about it. A large restructuring charge is considered a big bath technique. Frequently, managers charge more costs in the year they arrive, justifying their choice as a result of the previous non-good management of the company. In fact, researches show that the trend of returns undergoes a drastic change after the change of the executive board, going from a drastic loss in the year in which the new manager arrives, to a disproportionate increase in the following year, the so-called "V-shape recovery".

Change GAAP

The adoption of another set of accounting principles can be seen as lowering the quality of earnings, but no under the following conditions:

- Improved expense recognition rules, to better matches expenses with related revenues;
- Improved revenue recognition rules, to capture and have a better image of the reality considered is an opportunity to manage earnings;
- Volunteering for a new accounting standard.

Cookie jar reserves

In the current fiscal year, some balance-sheet items (inventory, warranty costs, pension expenses, allowances, and bad debt write-offs) are subject to an estimation process. Managers can deliberately record more expense in the current period to create a reserve of earnings to use in bad years, in order to smooth the earnings stream throughout the fiscal periods, until the cookie jar will be empty. The purpose of this process is to show a constant and straightforward flow of earnings.

Flushing the investment portfolio

The purchase of a minority stake, less than one-fifth of the share capital, is considered as a passive investment. The general accounting principle considers that this investment can be classified into two distinct categories: *available for sale of securities*, any changes in value in the tax year are reported in the OCI (other **comprehensive** income), while any changes in *trading securities* are shown in the operating result. Therefore, the possibilities presented for earnings management are different and can be realized by through a series of techniques such as timely sales of securities that have earned or lost value; Write-down of impaired securities.

Revenue recognition

Earnings management technique that consists of shifting time in recording revenues: early or deferred revenue recognition. Managers creating fake revenues to show a different financial result.

Use of derivatives

Derivatives are financial instruments (Options, Swaps) issue for the following purposes: to protect the holders against some types of business risk:

- Currency exchange rate shifts;
- Commodities supply and demand changes;
- Interest rate changes.

Derivatives can be appropriately used for the management of earnings, since for example, a company with a large number of fixed-rate bonds could enter into an interest rate swap, converting them at a variable rate, with an effective decrease or increase in interest expense.

1.4 Incentives to Manage Earnings

From the 1980s onwards there has been a growing diffusion of studies and research focused on the subsequent literature that examines the incentives of managers in earnings management. The most known incentives for earnings management in the literature are:

- Management compensation contracts;
- Equity incentives;
- Debt covenant considerations;
- Government regulations and tax considerations;
- Initial Public Offerings and Seasoned Equity Offerings;
- Mergers and Acquisitions.

Starting from that **management compensation,** Scott defines (2009, pg. 356) as: "as an agency agreement between the principal and the agent, in which the interests of both parties are aligned, basing the managers' compensation on one or more measures of the manager's performance in running the business". Other studies confirm the hypotheses that the compensation offered to managers could be an incentive to alter the number of profits in order to take advantage of a greater bonus or compensation linked to company performance. Thus, managers will anticipate future earnings in order to maximize the value of the bonuses they would get in the current period. Once their maximum bonus potential has been reached, as they have no incentive to show better business performance, they will set aside a portion of the profits, taking advantage of the subsequent accounting periods.

Equity incentives

The current literature studies the association between earnings management and equity ownership incentives. A consolidation in managerial ownership has the effect of reducing the opportunistic behavior of executives, as the objectives of stakeholders and managers will be aligned, this could result in an increase in company performance (Teshima and Shuto, 2008). Hence, equity-based compensation plans incentivize managers to act in the shareholders' best interest (Bergstresser & Philippon, 2006). Conversely, a reduction in managerial ownership leads managers to have a selfish behavior, looking only for their personal gain, penalizing and causing potential problems to the company belonging. In a distinct perspective, in a privately held firms, the equity-based compensation is less present because the shares are not freely transferable among investors.

Debt Covenants

An additional earnings management incentive is the use of debt covenants. Debt covenant is an agreement that cannot be violated between lenders and firms in which creditors establish some results (a predetermined level of EBITDA) and financial ratios to reach (maintaining a certain level of interest coverage ratio, a maximum debt-to-assets ratio, restrictions on dividend payment levels…), in order to protect lenders from the actions of managers that may conflict with their best interests. Since those ratios are calculated from information in the financial statements, managers can somehow manage the numbers. To comply with these measures in some way, managers implement shifting policies, drawing on incomes that would be accounted for in subsequent periods and recording them in the current period. This action would reduce the probability of default and avoid the violation or the renegotiation of debt covenants conditions. The violation of covenants implies the immediate payment of the loan or an increasing penalty rate on the borrowers' loan that may be recalled.

Sweeney (1994) discovers a positive relation between upwards earnings management and firms that are on the verge of violating debt covenant.

Government regulations and tax considerations

A further consideration has to be placed regarding government regulations, political costs and fiscal incentives for earnings management, since firms can avoid government interference by managing earnings downward and seeming less profitable. A close alignment between tax and accounting systems fosters the presence of fiscal incentives, in countries such as Italy and Belgium. Companies minimize their profits so as to reduce tax payments and those who have losses, report a just positive result so as to reduce the probability of tax audits.

IPOs and SEOs

Some shreds of evidence reveal a significant presence of earnings management around initial public offerings (IPOs) and seasoned equity offerings (SEOs). An SEO is a new equity issue of a company that is already publicly traded. Equity issuers have an incentive to boost their earnings before a public offering, since the pressure to make a great impression has always been high, companies prefer to issue shares at the highest possible price and increase offering proceeds. Understanding this, investors, during public purchase offers, take into consideration a lower value than the one actually presented.

Merger and acquisition

With the term M & A (Merger and acquisition) we refer to all those operations that lead to the merger of two or more companies: the merger is really consisted in the merger of the participating companies, with the termination of their legal existence in order to join a unique and new company. The acquisition consists of the legal annexation of two companies that retain their legal identity.

Recent studies have shown that there is a relationship between earnings management and mergers. The parties interested in these stock-for-stock mergers are aware of their potential. In fact, this thrusts manager to manipulate any current profits, pushing up the share price in order to gain a greater profit during the acquisition, since reducing the share exchange ratio, which would decrease the comprehensive acquisition cost to the buyer company. Louis (2004) argued that the pre-merger earnings management was meaningfully connected to the performance of stock-for-stock acquirers in both the short-term and the long-term. Likewise, he found that purchasing firms amplified their incomes in the period preceding a stock swap announcement.

Information Asymmetry and Agency Theory

A further motivation to engage in earnings management is related to the information asymmetry. Asymmetric information allows managers to manipulate profits according to their needs, because the owners, due to the lack of transparency in the accounting environment, are

unaware or do not have the means, resources to detect possible earnings management. In history, agency theory has been described as a relationship between principals and agents. When the board of directors or owners have to hire a person to manage and evaluate their work, two fundamental issues arise: How to guarantee agents perform in the way principals expect them; How to align the contradictory goals of managers and shareholders (Jensen and Meckling, 1976).

Jensen and Meckling (1976) argue that executives try to maximize their utility in a selfish way, this led to higher agency costs, due to the conflict of interests between stakeholders and management. Eisenhardt (1989) suggests that agency problems will rise when the agents or the executives manipulate financial information in the company to achieve their motivations, to increase his bonuses, to maximize their self-interest. A close alignment between managers and shareholders' interests it is likely to reduce the incentives of executives to perform earnings management.

1.5 Detecting Earnings Management: Accrual-based Models

From the early studies (Watts and Zimmermann 1978, Healy 1985 and DeAngelo 1986) to the new researches (McNichols, 2000; Bissessur, 2008; Stubben 2010), several models have been developed to detect earnings management: aggregate accruals models, specific accruals models, distribution of earnings models and discretionary revenues model. The work will focus mainly on the aggregate accrual models, which will be widely described.

Aggregate Accruals Models

Healy (1985), DeAngelo's (1986) develop models that use discretionary accruals, they considered total accruals and change in total accruals as a measurement to detect earnings management. Later, Jones developed a new model that take into consideration the non-discretionary accruals. However, these models lacking that the relationship between cash flows from operations and change in working capital, to improve the explanation how earnings management have been developed (McNichols 2002; Dechow & Dichev, 2002; Larcker & Richardson, 2004; Francis et al., 2005).

Dechow et al. (1995), compares discretionary accruals models and concludes that the Jones model (or their modified Jones model) works best. Regardless of the disadvantages, these two models are still broadly used in researches. As we can notice, in table 1.1 is represented as a description of the most characteristic aggregate accruals models, each of which is accompanied by its authors.

Table 1.1 Aggregate accruals models

Year	Author	Discretionary accrual proxy
1985	Healy	Total accruals
1986	DeAngelo	Change in total accruals
1991	Jones	Residual from regression of total accruals on change in sales and property, plant and equipment
1995	Dechow et al 1995 (DSS) Modified Jones Model	Residual from regression of total accruals on change in sales and on property, plant and equipment, where revenue is adjusted for change in receivables in the event period

Source: Research design issues in earnings management studies, Maureen F. McNichols.

In chronological order, the various models that composed earnings management literature will be explained.

The Healy Model (1985)

Healy, referring to Watts and Zimmermann's studies on positive accounting theory, analyzes and argues that managers within the company, implement a series of accounting policies in order to maximize their earnings-based bonuses.

The earnings, according to Healy, are broken down into discretionary and non-discretionary accruals and financial flows from operations. The main distinction between discretionary and non-discretionary accruals is that, in the first case the manager records the aforementioned components according to accounting methods and policies selected by himself; while the recording of operating cash flows in the balance sheet and the non-discretionary part of accruals must be performed in accordance with a set of relevant standards designated by regulators (FASB, IASB, SEC). Therefore, managers can affect at any time the amount of earnings via changes in discretionary accruals. Starting from the hypothesis that this year's discretionary accruals are elements of previous year's total accruals. Hence, discretionary accruals are expected to be zero. Every variation in discretionary accruals is a sign of earnings management, in a way of decreasing or increasing profits depends whether are below or above zero. Thus, comes back to the Healy theory, he uses three different scenarios to define the bonus schemes characteristics:

- Earnings are below the lower bound of the bonus plan and thus, no bonus will be paid;
- Earnings are above the upper limit of the bonus scheme, a maximum level of bonus paid;
- Earnings are between the lower and the upper bound of the bonus scheme, a level of bonus specified in the contracts will be paid.

These situations are expressed as follows:

$$B_t = P_t \left\{ \min \left\{ U_t, \max\{(E_t - L_t), 0\} \right\} \right\}^6$$

In the end, Healy states that: "there is a strong association between accruals and manager's income reporting incentives under their bonus contract" [7], underlining the manager's interest in manipulating earnings for the maximization of personal well-being.

The DeAngelo Model (1986)

DeAngelo (1986), in his analysis of research concerning the acquisition operations among listed companies, has proved that managers, in the presence of a management buyout, tend to manipulate earnings in order to reduce the value of shares. As a concern the DeAngelo Model (1986), he considers that the discretionary accruals are determined as the difference between current period total accruals and non-discretionary (normal) accruals; while normal accruals reflect the total accruals of the previous period. Unlike the Healy Model (1985), in the De Angelo Model, the estimation period of the nondiscretionary accruals considers only the prior year's observations → $NDA_\tau = TA_{\tau-1}$. On the other hand, both Healy and DeAngelo Models employ total accruals from the estimation period as a proxy of expected nondiscretionary accruals. When the discretionary accruals are zero in the estimation period and the nondiscretionary accruals are constant over time, both models will be able to measure accurately the nondiscretionary accruals. On the contrary, variations in the level of normal accruals may arise with respect to the economic conditions of the company, this will lead both models to measure the nondiscretionary accruals incorrectly.

The best model does not exist, depends on the represented conditions if the nondiscretionary accruals follow a random walk process the fitting model will be "De Angelo Model (1986), instead if they follow a white noise process around a constant average, Healy Model (1985) will be proper.

Jones Model (1991)

Jones (1991) model bears out the assumption that nondiscretionary accruals are variable. As a result of the firm's economic position, Jones's (1991) model includes other two variables: change in revenues and the gross amount of fixed assets, with the aim to control the effects of the changes that may happen in the nondiscretionary accruals.

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[6] B_t, the value of the bonus pool; P_t is the contract; U_t is the upper limit and (E_t-Lt) are the reported earnings minus the earnings target.

[7] Paul M. Healy September 1984. *The Effect of Bonus Schemes On Accounting Decisions.*

Differently, previous models measured earnings management by dividing total accruals into discretionary and non-discretionary components, Jones (1991) stated that, in order to detect any earnings management, the use of total accruals is more effective respect the single accruals, as since checks are performed on pre-tax earnings, which will reflect the total accrual.

The Jones Model for Total accruals in the event year is:

$$TA_{it}/A_{it-1} = a_i \,(1/A_{it-1}) + B_{1i}\,(\Delta REV_{it}/A_{it-1}) + B_{2i}\,(PPE_{it}/A_{it-1}) + \varepsilon_{it}$$

Where, **TA** it represents the total accruals during the period (t) for the company (i); **A** denotes the total assets; **PPE** is property, Plant and Equipment; Δ**REV** is the change in revenues, and ε is the random error. **Discretionary accruals** in this model are represented by the residual term "ε".

Jones's (1991) findings show that the model is effective in explaining around one-quarter of the variation in total accruals (Dechow et al., 1995). Empirical tests demonstrate an enhancement in the power of the Jones model to detect earnings management related to the models in Healy (1985), DeAngelo (1986) and McNichols et al. (1988).

The key point in the Jones (1991) model is that the variation in the total accruals depends on the change in the discretionary accruals since normal accruals do not detect continuous changes between various periods.

An important study regards the import reliefs: Government's measure to decrease the costs of imports to local producers through policies of marketing agreements, quotas, subsidies, and tariffs. Jones tried to recognize whether firms would like to make benefit of Import reliefs. The results reveal the fact that managers of the firms who would like to make use of these tariffs conduct earnings management via discretionary accruals in a way of declining profits.

Modified Jones model (1995)

A new model brought in Dechow et al. (1995) to the existing literature "the Modified Jones Model" included the change in account receivables to the previous Jones model.

The Modified Jones Model is proposed to remove misspecification problems in the Jones model arises due to the omission of a separate variable to reflect managers exercising their discretion over revenues recognition (Dechow et al. 1995). Therefore, the only adjustment to the Jones Model is the inclusion of the change in receivables in the event year, as a proxy for this.

The Dechow et al (1995) model assumes that all the changes in the number of sales during the period of study resulted from earnings management application, whereas Jones (1991) argued that no incomes entries are performed before the accrual conditions concerning the making of

the entry come into existence wholly[8]. In Dechow case, sales incomes are entered before they accrue, there will be an increase in trade receivables and in accruals as a result of this increase. Dechow, et al (1995) define total accruals as a difference between net operating income and cash flow from operating activities, as we can see in the following equation:

TAi,t = NOPIi,t – CFOi,t.

Non-discretionary accrual, instead, (NDAC) is presented by:

NDACi,t/ Ait-1 = a1 (1/Ait-1) + a2 (△REVit - △RECit /Ait-1)+ a3 (PPEit/ Ait-1)

Where; Ai is the total assets: Δ REVi, is the changes in the revenue (from credit sales) and ΔRECi, t is the changes in account receivable for the company (i) during period (t); PPE is Property, Plant and Equipment. Random error "ε" represents the discretionary accruals. The residual term is calculated as:

DACi,t = Tai,t – NDACi,t

Eventually, if the null hypothesis stated that discretionary accruals are less than or equal zero is rejected, then the alternative hypothesis stated that accruals are managed upwards will be accepted (Healy, 1985).

The Modified Jones model is the earnings management model par excellence since it is the first paper that used time series data to conduct the research. Above all, it has the highest power to detect earnings management, defining it as the model with the lowest incidence of Type II errors.

Specific Accruals Models

A different approach was used by researchers like Teoh, Wong, et al. (1998) that in defining earnings management, they considered a model (specific accruals model) that compares normal accruals levels with changes that occurred during an event. Specific accrual model, in respect of the aggregate accrual model, shows the following pro and cons (table 1):

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[8]IAS-18: Recognition, as defined in the IASB Framework, means incorporating an item that meets the definition of revenue (above) in the income statement when it meets the following criteria: it is probable that any future economic benefit associated with the item of revenue will flow to the entity, and the amount of revenue can be measured with reliability.

Table 1.2 The pros and cons of the accrual's models

PROS	CONS
Straight capacity to determine the relationship between explanatory variables and single accrual account	Higher costs to gather data and information
The ease of forecasting how crucial aspects will affect the accrual behavior	the difficulty to ascertain which accrual account was used in earnings management

Source: My elaboration

In addition, empirical pieces of evidence show that a much lower number of firms apply earnings management via specific accrual models respect of the number of firms which apply earnings management through total accruals approaches.

Distribution of Earnings Models

Unlike the previous approaches, distribution of earnings models has been developed to investigate the statistical properties of earnings by identifying the firm's behaviors such as benchmarking (Bissessur, 2008). According to some previous researchers, among the first: (Burgstahler and Dichev (1997), have suggested that: fixed to reach a certain earning's benchmark above which companies have greater incentives, profits, it was observed that the distribution of earnings is it is distributed in a very unequal way with a much smaller number of observations, in case profits were below the zero thresholds and just below the prior period's profits.

Discretionary Revenues Models

The discretionary revenues models come back to the work of Mest and Plummer (2001), afterward, Stubben (2010) and Caylor (2010) developed a recent version.

Caylor (2010) developed two discretionary revenues models; the normal changes in deferred revenue model and the normal changes in the gross accounts receivable model. The results of his models show that managers manipulate their earnings via accrued and deferred revenue. An effective analysis of the power of the revenue and accruals models could be useful to identify actual and simulated earnings management in the manipulation of revenues and costs (Stubben, 2010).

Stubben's (2010) findings study shows that the discretionary revenues model presents less bias and error than the accrual models. However, neither of the two models (accruals and discretionary revenue models would reveal manipulations in the expenses.

The Caylor Model (2010)

The Caylor (2010) model emphases usage from the executives their discretion over revenue recognition, such as through deferred revenue (advance from customers) and accrued revenue (accounts receivable).

Caylor (2010) model develop his study basing on three benchmarks:

- Avoidance of negative earnings surprises;
- Avoidance of earnings reductions;
- Avoidance of losses.

Benchmarks are tested using two earnings management models, based on deferred revenues and gross accounts receivable. Caylor (2010) structures the model to analyze the formers factors:

Δ**Gross (A/Rt)/ At-1** $= \alpha 0 + \alpha 1 * (1/At-1) + \beta 1 * (\Delta St/At-1) + \beta 2 * (\Delta CFOt+1/At-1) + \varepsilon t$

Where, the change in gross receivables is related to current sales because the receivables are the sale accrued in the current period; and cash flows from operations at time "t" plus one, since cash flow will occur in the next year or in the coming years. The normal changes in the deferred revenue model are quantified as:

Δ**Def Revt/ At-1**$= \alpha 0 + \alpha 1 * (1/At-1) + \beta 1 * (\Delta St+1/At-1) + \beta 2 * (\Delta CFOt/At-1) + \varepsilon t$

Where; ΔDef Revt, short-term deferred revenue changes during period t, related with the future sales because deferred revenue includes amounts deferred to the next period; and cash flows from operations at the time "t", since cash related with deferred revenue was gained in the current period.

Caylor's (2010) results demonstrate that executives used deferred revenue and account receivable to prevent negative earnings surprises more than avoiding losses or earnings reductions.

2. The recent evolution of the wine sector and the Italian industry structure

"Italian wine is the most exported food product abroad where most of the Made in Italy bottles have been uncorked, the sector has grown by betting on its identity, with a decisive turn towards the quality that represents a reference model for the growth of the entire national agri-food sector ".[9]

2.1 A general overview of Italian wine

Italy is so far, the country with the widest and most diversified wine production in the world. But how is the wine product defined by Regulation (EC) 479/2008 about the wine sector? "Wine is the product obtained exclusively from total or partial alcoholic fermentation of fresh grapes, crushed or not, or grape must".[10]

The wine sector has always been one of the main pillars of the national economy and a representative instrument of our culture all over the world.[11] Wine is a product that embodies Italian excellence and a lifestyle to follow that is part of the Mediterranean diet. A product appreciated in the world for its genuineness and quality. Italy is a country that attracts millions of foreign tourists a year to enjoy the cuisine, the flavors, the landscapes and our artistic and monumental beauties.

The wine sector represents the Italian culture at the base of the product and supports and contributes to the development of the national economy. The scenario sees SMEs appear as a real resource, with an important capillary presence throughout Italy, with an increasing number in terms of volume and bottles produced each year. Companies that very often also have a strictly family character and must face continuous competition and fight in this market characterized by constant uncertainty about the quality and quantity of the crop. In the last decades, the Italian company and the productive fabric have had to face the phenomenon of globalization, expanding their borders beyond the national territory. Wine as a driver of

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[9] https://winenews.it/it/cresce-nel-2017-il-fatturato-del-vino-italiano-5-per_360751/, (Accessed September 11, 2018).

[10] *Council Regulation (EC) 479/2008 of 29 April 2008,*

https://www.politicheagricole.it/flex/cm/pages/ServeAttachment.php/L/IT/D/1%25F3%252Fc%252FD.8abccd27

dea35d12ff57/P/BLOB%3AID%3D3241/E/pdf, (Accessed September 8, 2018)

[11] Di Noia Davide (2016). *Smart Agrifood: the wine tourism phenomena and internationalization patterns in the wine sector. Puglia and Veneto: a comparison of two regions*, p.4

sustainable development aimed at enhancing the resources available embodies immaterial and symbolic values, placing itself on the most advanced frontier of conscious, mature, responsible consumption, very oriented towards the material and immaterial quality of the product. The potential and quality of Italian wine are still partially unexpressed. The competition, the lack of communication and promotion activity has led many companies in the past to choose to opt for a lower price in order to attract the customer. The real challenge of the near future is to exploit and reap the rewards of Italian excellence, emphasizing the value and approach to local food, as an ambassador in the world of Made in Italy.

2.2 Market analysis: Production and consumption of wine in the world

The latest provisional forecasts of the OIV (International Organization of the Vineyard and Wine) on the statistical data for 2017 say that the world wine production (excluding juice & musts), with its 250 million hectoliters, has fallen, compared to 2016, by 23.6mhl. This can be considered as the lowest "World wine production" of the twenty-one century, as we notice in Figure 2.1.

Figure 2.1World wine production
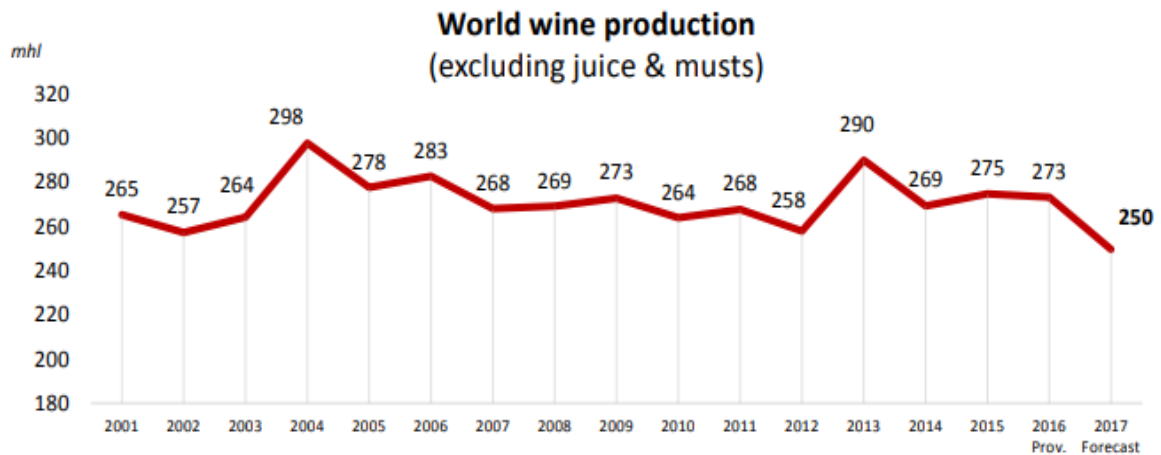
Source: OIV-State-Of-The-Vitiviniculture-World-Market-April-2018

As is well known, European nations are the first in the world as wine production.[12] In this worldwide ranking, Italy with its 42.5 million hectoliters[13] produced in 2017 (-17%), is in first place for the production of wine since 2015, followed by France with 36.7 mhl (-19%) and Spain 32.1 mhl (-20%). Italy, in recent years it has confirmed its production leadership. Even in 2017, despite the notable drop, Italy confirms its position as the world's leading wine producer. In the other European member states, it can be noticing a different scenario with a moderate reduction in Germany (7.7 mhl, - 15%), and reasonable increase in volume production in 2017 in Portugal, Romania and Austria. Beyond the Atlantic Ocean, in the United States, the wine production stands at 23.3 million hl, with a slight "V-shape" trend in the last five years of observations (2013-2017).

Climate trends have strong repercussions in some areas of the planet, like what happens in South America periodically with the alternation of the phenomena El Niño and El Niña[14].

Therefore, in South America, wine production has evolved differently in several countries. In Argentina, after a terrible 2016, wine production is increased (+25%) moving to 11.8 mhl, but still far from the previous production levels achieved at the start of the decade. In Chile, wine production in 2017 declined once more, with a negative variation in the volume of 0.6 million hectoliters. Good news arrives from the Brazilian production, with a strong recovery in 2017 (3.4 mhl), representing the best harvest since 2011. In South Africa, the production moves to 10.8 mhl in 2017.

In Oceania continent, New Zealand continues its fluctuating performance over the last 5 years, closing the year 2017 with an expected production of 2.9 million hectoliters; while, in immense Australia, the production in the last triennial has seen a moderate growth (2015-2017, + 15%), despite the vineyard surface has not changed, reaching this year "2017" a production amount of 13.7 million hectoliters. All the data are represented in the reported Figure 2.2.

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[12] Between 2013 and 2017, the average annual production was 168 million hectoliters. In 2017 it accounts for 44.3% of wine-growing areas, 56% of production, 54% of global consumption and 74.7% of exports in global terms. https://ec.europa.eu/agriculture/wine/statistics_en, (Accessed September 14, 2018).

[13] According to the estimates and harvesting forecasts produced by the Wine Observatory, the amount of wine produced in Italy in the 2018 would be around 49 million hectoliters (+15%/2017).

[14] El Niño and La Niña are opposite phases of what is known as the *El Niño-Southern Oscillation* (**ENSO**) cycle. El Niño is a climate cycle in the Pacific Ocean with a global impact on weather patterns.
The cycle begins when warm water in the western tropical Pacific Ocean shifts eastward along the equator toward the coast of South America. Normally, this warm water pools near Indonesia and the Philippines. During an El Niño, the Pacific's warmest surface waters sit offshore of northwestern South America. La Niña episodes represent periods of below-average sea surface temperatures across the east-central Equatorial Pacific https://oceanservice.noaa.gov/facts/ninonina.html, (Accessed September 15, 2018).

Figure 2.2 World wine production top countries (excluding juice and musts)

mhl	2013	2014	2015	2016[b]	2017[c]	2017/2016 Variation in volume	2017/2016 Variation in %
Italy	54.0	44.2	50.0	50.9	42.5	-8.4	-17%
France	42.1	46.5	47.0	45.4	36.7	-8.7	-19%
Spain	45.3	39.5	37.7	40.0	32.1	-7.9	-20%
United States[d]	24.4	23.1	21.7	23.6	23.3	-0.3	-1%
Australia	12.3	11.9	11.9	13.0	13.7	0.7	5%
Argentina	15.0	15.2	13.4	9.4	11.8	2.4	25%
China	11.8	11.6	11.5	11.4	10.8	-0.6	-5%
South Africa	11.0	11.5	11.2	10.5	10.8	0.3	3%
Chile	12.8	9.9	12.9	10.1	9.5	-0.7	-6%
Germany	8.4	9.2	8.9	9.0	7.7	-1.3	-15%
Portugal	6.2	6.2	7.0	6.0	6.6	0.6	10%
Russia	5.3	4.8	5.6	5.2	4.7	-0.5	-10%
Romania	5.1	3.7	3.6	3.3	4.3	1.0	31%
Brazil	2.7	2.6	2.7	1.3	3.4	2.1	169%
Hungary	2.6	2.4	2.8	2.8	3.1	0.2	8%
New Zealand	2.5	3.2	2.3	3.1	2.9	-0.3	-9%
Greece	3.3	2.8	2.5	2.5	2.6	0.1	2%
Austria	2.4	2.0	2.3	2.0	2.4	0.4	23%
Serbia	2.3	2.3	2.3	2.9	2.3	-0.6	-21%
Moldova	2.6	1.6	1.6	1.5	1.8	0.3	20%
Ukraine	2.8	1.5	0.9	1.2	1.2	0.0	0%
Bulgaria	1.7	0.7	1.3	1.2	1.2	0.0	-2%
Georgia	1.0	1.1	1.3	1.1	1.1	0.0	0%
World	**290**	**269**	**275**	**273**	**250**	**-24**	**-9%**

Source: OIV-State-Of-The-Vitiviniculture-World-Market-April-2018

a) Countries for which information has been provided with the wine production of more than 1 mhl;
b) 2016: provisional data;
c) 2017: forecasted data;
d) OIV estimate (USDA basis).

After beer, which represents about 78% of the global total, wine is the second most widely consumed type of alcoholic beverage in the world with a production that is equal to about 11% of alcoholic beverages.[15]

World consumption is estimated to be around 243.6 million hectoliters for 2017, showing a stable trend in the last decade, with a sharp decline immediately after 2008 during the world financial crisis Figure 2.3.

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[15] VENETO AGRICOLTURA. *IL VINO BIOLOGICO VENETO*, http://www.venetoagricoltura.org/wp-content/uploads/2018/04/Il-vino-biologico-veneto.pdf, (Accessed September 18, 2018)

Figure 2.3 World wine in consumption in 2017 in million hectoliters
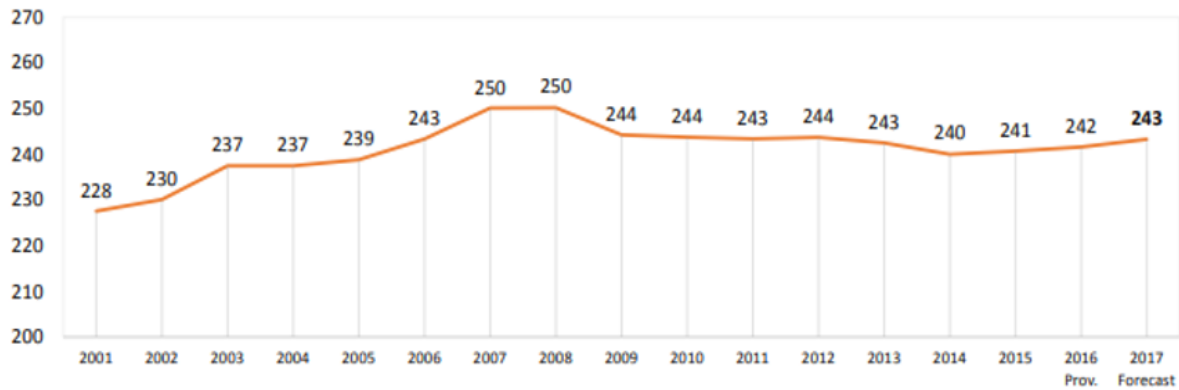
Source: OIV-State-Of-The-Vitiviniculture-World-Market-April-2018

In 2017, world consumption confirmed the slight recovery observed in 2016, which interrupted a flexing trend in progress since the economic crisis that began in 2008. In the meantime, the geography of consumption has changed, with the US becoming the world's first consumer, with around 32.6 million hectoliters of wine consumed, established its position as the top global consumer for the seven-consecutive year.

It is estimated that in the United States the millennials (young born at the turn of the nineties) are consuming more wine than all the previous ones with tastes, methods and needs unknown to their predecessors. The United States, followed by Euro countries, France (27.0 million hl), Italy (22.6 million hl), Germany (20.2 million hl), giving a break in the declining consumption. There is a significant progression of China's consumption of wine, highlighting a compound interest rate cagr[16] (2014/2017) of +5%, reaching "17.9" million hectoliters in 2017. In Oceania, Australia is characterized by continuous growth in wine consumption (5.8 mhl in 2017, +4.9%/2016).

In 2017, South Africa wine consumption reach 4.5 million hl confirming growth trend; while in South America, despite the increase in production in 2017, the domestic consumption in Argentina and in Chile continued to decline, as we notice in the Table 2.1.

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[16] Represents the average annual percentage growth of a quantity over a period of time.

Table 2.1 World wine consumption 2017 in mhl (Top 30 countries)

mhl	2013	2014	2015	2016[b]	2017[c]	2017/2016 Variation in volume	2017/2016 Variation in %
United States	30.8	30.6	30.9	31.7	32.6	0.9	2.9%
France	27.8	27.5	27.3	27.1	27.0	-0.1	-0.4%
Italy	20.8	19.5	21.4	22.4	22.6	0.2	0.9%
Germany	20.4	20.3	19.6	20.1	20.2	0.1	0.3%
China*	16.5	15.5	16.2	17.3	17.9	0.6	3.5%
United Kingdom	12.7	12.6	12.7	12.9	12.7	-0.2	-1.4%
Spain	9.8	9.9	10.0	9.9	10.3	0.3	3.1%
Argentina	10.4	9.9	10.3	9.4	8.9	-0.5	-5.2%
Russia	10.4	9.6	9.2	9.1	8.9	-0.2	-2.5%
Australia	5.4	5.4	5.5	5.5	5.8	0.3	4.9%
Canada	4.9	4.7	4.9	5.0	4.9	-0.1	-1.7%
Portugal	4.2	4.3	4.8	4.6	4.5	-0.1	-2.0%
South Africa	3.7	4.0	4.3	4.4	4.5	0.1	2.4%
Romania	4.6	4.7	4.0	3.8	4.1	0.3	8.5%
Japan	3.4	3.5	3.5	3.5	3.5	0.0	0.0%
Netherlands	3.3	3.4	3.5	3.4	3.5	0.1	2.2%
Brazil	3.5	3.2	3.3	3.1	3.3	0.2	6.0%
Belgium	2.9	2.7	3.0	3.0	3.0	0.0	0.0%
Switzerland	2.7	2.8	2.9	2.8	2.8	0.0	0.0%
Austria	2.8	3.0	2.4	2.4	2.5	0.1	4.4%
Hungary	2.0	2.3	2.2	2.3	2.4	0.1	4.5%
Sweden	2.4	2.3	2.4	2.4	2.4	0.0	-0.3%
Greece	3.0	2.6	2.4	2.3	2.3	0.0	1.4%
Chile	2.9	3.0	2.6	2.4	2.2	-0.2	-9.6%
Serbia	2.3	2.4	2.4	2.8	2.2	-0.6	-21.3%
Czech Rep.	1.6	1.6	1.9	1.9	1.8	-0.1	-5.5%
Denmark	1.6	1.6	1.6	1.6	1.5	0.0	-2.4%
Poland	0.9	1.0	1.1	1.1	1.2	0.1	7.3%
Croatia	1.4	1.2	1.1	1.2	1.1	-0.1	-8.9%
World	**243**	**240**	**241**	**242**	**243**	**1.7**	**0.7%**

Source: Oiv-state-of-the-vitiviniculture-world-market-april-2018

A greater opening of non-traditional markets with new consumers on the market. Everything is changing: lifestyles, the use of wine, information needs; some trends seem to be consolidated with the greater interest towards low caloric wines (sparkling wines and rosé wines) up to affect the health qualities of the final product (natural, organic and biodynamic wines). In addition, new market shares are expected for non-conventional packaging (bag in boxes, cans, brick and half bottles) or for drinks based on wine and fruit, for example.

2.3 World trade: Wine's import and export

The wine market has been growing over the past 15 years. The value of exports increased, between 2000 and 2017, from 12 to 30.4 billion euros.

In 2017, the global trade in wine is estimated at 107.9 million hectoliters in terms of quantities (+3.4%/2016), while in value transactions amount to 30.4 billion euros a relative increase of +4.8% compared to 2016.

Main exporters

Exports in terms of volume:

- In 2017, Spain is still in the lead, confirming a global market share of over 20%, with 22.1 mhl of wine, but followed by Italy (21.4 mhl, 4%/2016) and France (15.4 mhl, 7%/2016), that have increased exports, largely to the detriment of Spain (-9.7%/2016).

- Other countries such as Chile, Australia, South Africa increased by more than 4% in relation to 2016. Instead, The United States and Argentina have seen decrease their exports in relative terms (respectively -14.0% and -13.5%/2016).

Exports in terms of value:

- France is confirmed as leader in the world in terms of value, with market shares of 29.6% with 9 bn EUR of exports in 2017.

- Italy represents "19.3%" of the global export in terms of value (around 6 bn EUR).

- Spain accounts for 20.5% of the global volume in export, but only 9.3% in terms of value, the gap with the prices of French wines remains.

Among the countries which are more in development, the fastest-growing wine exporters since 2013 were: China (up 1,031%), Hong Kong (up 175.3%), Singapore (up 16.5%), New Zealand (up 16.2%) and Australia (up 14.5%).[17]

As a whole, in terms of value a considerable increase in France, Italy, Australia. On the other side, in 2017, United States has occurred the most significant reduction, going from 1.4 bn EUR to 1.2 bn EUR (-10% in 2017), as we notice in the Table 2.2.

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[17] http://www.worldstopexports.com/wine-exports-country/, (Accessed October 11, 2018).

Table 2.2 Main wine exporters (excluding juice and musts)

	Volume (mhl)		Value (m EUR)	
	2016	2017	2016	2017
Spain	24.4	22.1	2,649	2,814
Italy	20.6	21.4	5,582	5,873
France	14.4	15.4	8,263	8,989
Chile	9.1	9.8	1,668	1,741
Australia	7.5	8.0	1,543	1,727
South Africa	4.3	4.5	602	583
Germany	3.8	3.8	936	926
United States	3.8	3.3	1,415	1,280
Portugal	2.8	3.0	723	752
New Zealand	2.1	2.5	1,017	1,054
Argentina	2.6	2.2	739	713

Source: Oiv-state-of-the-vitiviniculture-world-market-april-2018

Analyzing even more in detail the value and volume of quantities exported, with reference to the first two countries in the world (France and Italy), we note that Italy in 2017 has exported almost 40% more than France. Despite this significant data, it would be assumed that the values exported to France should be lower, but the statistics and results are diametrically opposed: with around € 9 billion, France is the world's leading exporter in terms of value, separating Italy by as much as 3 billion of €. The main reason for this gap is evident from the average price of Italian and French exports, with the latter reaching more than twice the average price applied by Italian exporters. The current situation in France is the result of a mix of age-old features and marketing strategies but should not make one think of an unbridgeable gap: in recent years Italy is the country that has grown most in terms of export value, mainly in the top range of wines. However, the unit value in hectoliters obtained from the ratio between the value of wine production and wine production in quantity is equal to 191.4 euros per hectoliter in Italy, lower than France (316.6 euros / hectoliter). Italian wine is a powerful ambassador of local food and in general of Made in Italy and Italian style, but the power in place can be deployed much more by working on the creation of value: more quantities exported in more than proportional increments of value. In fact, with 21.4 million hectoliters, Italy is the second largest exporter of wine in quantity, after Spain (22.1 million hectoliters). If it were possible to export wine at the same value per hectoliter of France, the total value of Italian exports could rise up to twice the current value "12 billion euros".

According to the Altagamma study, Italian companies that produce top wines and export more than 60% have an EBITDA margin of around 29%, compared to an average of 9% for medium and mass market companies.[18]

Another aspect to take in consideration is the CMO (common organization of the market). "The wine CMO is the single regulation of the European Union which dictates certain rules concerning the wine sector, both with regard to production standards and non-repayable grants awarded to companies. The funding and contributions of the wine CMO are assigned by the Ministry for Agricultural Politics and by the departments for agriculture of the individual regions and autonomous provinces. The wine CMO allocates non-refundable contributions for expenses related to the promotion of wine abroad, such as participation in fairs, tasting in restaurants, or simply advertising. Very important is the possibility of financing the wine used in tastings abroad or of financing the incoming of potential customers in their own cellar."[19]

Dino Scanavino, President of the CIA, said that these markets are often a success factor for Italian wine. Community experience "through an intervention to support innovation along the supply chain, without neglecting the need for a careful and effective policy of simplification of the sector ". [20]

In another perspective, referring to Italian exports, from a first division between sparkling wine, bottled wine (not sparkling wine) and bulk wine (> 2 liters) shows that:

- The main driving force for Italian exports is bottled (not scintillating) with 70% of the total annual turnover of € 4.1 billion;
- Sparkling wine is just a little over a year of Italian wine exports in the world, with huge growth in recent years, from annual values close to 550 million euros in 2015 to over 1.3 billion euros in 2017, driven by the great success of Prosecco which has had a real success in countries such as the United Kingdom.
- Bulk wine exports seem marginal (slightly less than 400 million euros in 2017), with a trend that increases the specific weight of this category on the total Italian exports.

Main importers

The main importing countries are Germany, the United Kingdom, the United States – that typically represent most of all imports with 40.2 mhl at a value of 11.1bn EUR in 2017.

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[18] http://www.repubblica.it/economia/rapporti/osserva-italia/il vino/2018/07/02/news/_cosi_i_ristoranti_trainano_le_etichette_d_eccellenza_ora_dobbiamo_lavorare_sul_posiz ionamento_di_mercato_-200610455/, (Accessed October 12, 2018).

[19] http://www.ocmvino.it/ocm-vino-paesi-terzi, (Accessed October 12, 2018).

[20] https://www.vinitaly.com/it/news/wine-news/il-presidente-del-consiglio-gentiloni-a-vinitaly/, (Accessed October 12, 2018).

In 2017, Germany is still representing the top importer with 15.2 million hectoliters, with no variation compared to 2016, but in monetary terms the ranking is upside down, United States consolidates its first place as top importer by value (5.2bn EUR in 2017,+3.6%/2016), followed by the United Kingdom (3.5 bn EUR, -1.5%) and Germany (2.5 bn EUR; -1.7%). Bearing in mind that the sharp annual decrease of the United Kingdom is also explained by the strong monetary instability, it is difficult to know what the long-term consequences of Brexit on the wine industry might be.

In Asia, as we know, China increase in an astonishingly way both volumes and values (respectively, +17%, +15%/2016), as a result of increasing in a domestic consumption and leading it to overcome Germany in the following years, as we notice in Table 2.3.

Table 2.3 Main wine importers (excluding musts)

	Volume (mhl)		Value (m EUR)	
	2016	2017	2016	2017
Germany	15.2	15.2	2,510	2,469
United Kingdom	13.5	13.2	3,499	3,453
United States	11.1	11.8	5,009	5,190
France	7.6	7.6	741	812
China	6.4	7.5	2,143	2,458
Russia	4.0	4.5	662	878
Netherlands	4.0	4.4	980	1,139
Canada	4.2	4.1	1,604	1,653
Belgium	3.1	3.1	902	897
Japan	2.7	2.6	1,343	1,388

Source: oiv-state-of-the-vitiviniculture-world-market-april-2018

An interesting thing to notice is that some Asian countries such as China and Hong Kong have the highest growth rates in terms of imports in the last 5-6 years, but also Canada and the United States show important increases in imports, both in quantity and in value, and present themselves as expanding markets also for the near future.

2.4 The wine reality of the Italian regions

Winery surface area in Italian regions

"The surface area for the production of wine grapes in Italy is around 678 thousand ha, ranking fourth in the world behind Spain, China and France. Italy suffered a sharp decline from the beginning of twenty-one century, losing almost one-sixth of the entire surface area. In fact, if in Italy in 2008 there were a total of 754,964 hectares invested in vineyards, currently there are 678,210 hectares in production, of which only 6.5% of them are table grapes. The loss of area under vines in production in the analyzed period of time is equal to -10.2%".[21]

Besides that, from January 2016, the new Regulation (EU) n. 1308/2013 limits the authorizations of planting new vineyards, with the maximum annual limit of 1% of the national vineyard area, limiting its growth. Unlike what happens in Italy, in Veneto, the area affected by vineyards for wine grapes already in production in the last decade is continuously growing. In 2008 it started from 69,660 ha, to reach the current 84,704 ha with a 10-year rise of + 21.6%. Veneto is the third region, as extension surfaces, far behind Sicily that represents the top of ranking (106,564 ha) and closes in on Puglia (85,500 ha). The sum of the surfaces of these regions by extension is equal almost half of the entire Italian surface area Figure 2.4.

Figure 2.4 Vineyard areas separated by region (in hectares) - year 2017
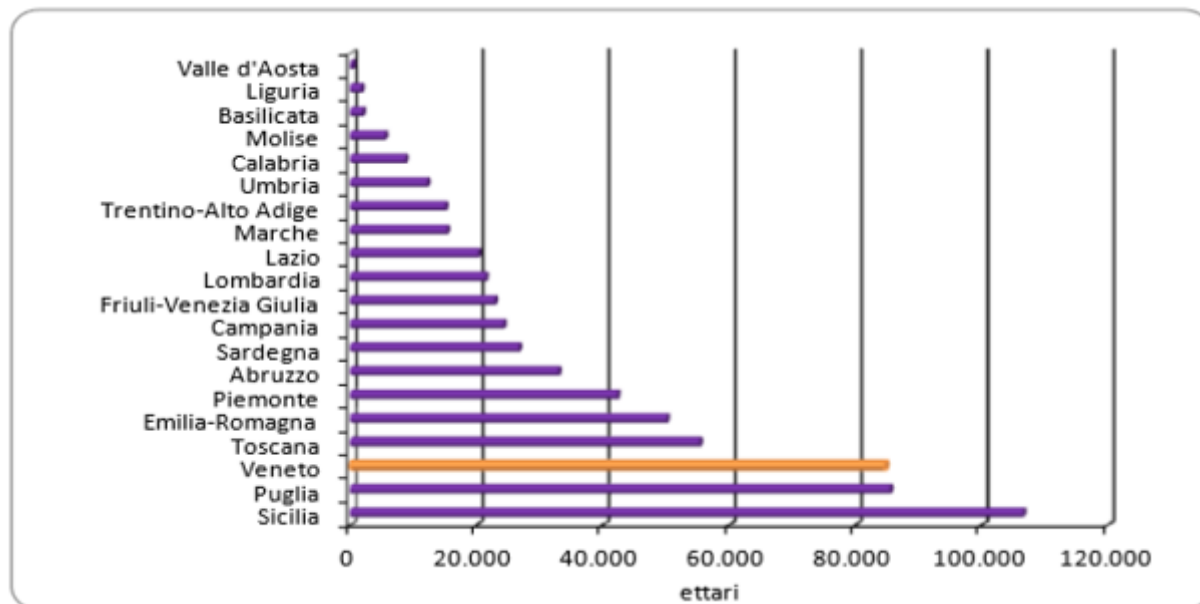
Source: Veneto agricoltura - Il-vino-biologico-veneto

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[21] VENETO AGRICOLTURA. *IL VINO BIOLOGICO VENETO*, http://www.venetoagricoltura.org/wp-content/uploads/2018/04/Il-vino-biologico-veneto.pdf , (Accessed October 13, 2018).

Seasonal production trend in the Italian regions

"A good harvest that will allow the Italian wine sector to recover after a difficult year. Production is estimated at 49 million hectoliters, with an increase of 15% compared to 42.5 million last year, which brings Italy closer to the pre-2017 averages.] … [The Italian viticulture, in large part, has been able to deal with this bizarre seasonal trend with attention, timeliness and professionalism, allowing our country to confirm its own again this year global productive leadership". [22]

The production result mentioned would allow Italy to maintain world leadership despite the outstanding increases in production estimated for France (46.1mhl) and Spain (43mhl). In fact, in the first five months of 2018, there was evidence on shrinking volumes shipment that stopped at 7.7 million hectoliters, with a reduction of 10% of wine volumes exported worldwide. However, it's predicted a production growth in 2018, with a positive effect on the recovery of Italian exports in international markets, reaching a value estimated of 6.25 billion euros at the end of the year.

The increase in production has been in every region of Italy, with quantitative increases (different percentage increases) and qualitative increases (right development of the sugar level and regular different oenological parameters), depending on the atmospheric conditions that are verified during the entire vegetative cycle. The heavy rains and the persistent humidity favored the spreading of the downy mildew in some areas of Italy, the region most affected by the summer rains was Sicily, bringing the plants even to a slower maturation and lower production (only 5% more than the catastrophic year 2017).

The grape harvest in Veneto returns to normal, with the major provinces expected to important productive recovery. A promising year, with double-digit growth in production (17%) over 2017 and a good quality of the wine.

In Puglia, during the season, events like water bombs occurred in some areas of the region, have reduced the initial estimates of production, but with a relative increase of 12%, compared to 2017 Table 2.4. Regardless of, winemakers remain confident about the success of the harvest, especially white grapes in general. Some concern persists on the gradation of the grapes, in particular for red wines. (Accessed October 15, 2018).

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[22] OSSERVATORIO DEL VINO, *Vino. Vendemmia 2018: L'italia Si Conferma Primo Produttore Al Mondo,* https://news.unioneitalianavini.it/.../2018_OSSERVATORIO-DEL-VINO_CS_Previsio..., , (Accessed October 15, 2018).

Table 2.4 Italian production of wine and musts (thousands of hectoliters)

	2017	2018*	Var%
Piemonte	2.559	2.933	15%
Valle d'Aosta	10	13	30%
Lombardia	1.056	1.285	22%
Liguria	40	48	20%
Bolzano	270	317	17%
Trento	1.074	1.266	18%
Veneto	9.679	11.276	17%
Friuli Venezia Giulia	1.518	1.742	15%
Emilia Romagna	6.620	7.797	18%
Toscana	1.628	2.026	25%
Umbria	272	339	25%
Marche	653	813	25%
Lazio	720	897	25%
Abruzzo	2.843	3.312	17%
Campania	618	711	15%
Molise	173	199	15%
Puglia	8.130	9.119	12%
Basilicata	65	76	18%
Calabria	109	131	20%
Sicilia	4.109	4.307	5%
Sardegna	354	395	12%
Totale	**42.499**	**49.000**	**15%**

Source: Osservatorio Del Vino, Previsioni Vendemmiali

From the Table 2.4 Italian production of wine and musts (thousands of hectoliters)**,** it notes that regions such as Sicily, which has the greatest wine extension, produces less wine and must than Veneto, which is considered the Italian homeland of wine exports in the world.

The main reason may be due to a large number of operators, wineries especially in Veneto, which allows greater efficiency at the local level. In terms of equal company size, each individual company having a smaller wine extension, trying to maximize their production, and above all in an attempt to satisfy the growing demand for Prosecco from foreign countries such as Great Britain, China.

The others reasons may vary: a greater concentration of vineyards per vine-growing area, the intrinsic characteristics of the territory (fertility, meteorological conditions and morphological roughness), a vineyard with different characteristics depending on the territory of belonging, with a lower quantity of grapes per vineyard in Sicily that lends itself to a product with a higher alcohol content.

On the consumption side, the share of wine consumers in Italy has been reduced over the last thirty years, however, remaining above 50%. On the other hand, the share of large consumers (people who drink more than half a liter a day) has decreased, from 7.4% in 1983[23] to just 2% in 2018. The Italian people are increasingly responsible for the consumption of quantities, making more and more attention to quality. At a regional level, the situation sees consumption rising as the latitude increases, placing the regions of the north-east in the first position with a quota of 58.3% and lastly the islands with only 43.6%.

The share of wine consumption among younger people has decreased significantly in recent years compared to the total, shifting the balance to the older classes over 45 representing almost 60% of consumers.

- 18-24 years: 8.5%;
- 25-34 years: 14.4%;
- 35-44 years: 17.9%;
- 45-54 years: 20.0%;
- 55-64 years: 15.7%;
- 65+ years: 23.4%.[24]

In 2017 almost 29 million people consume wine, younger consumers ("millennials", the range of people ranging from 18 to 34 years) are quantitatively less, but they are growing: great interpreters of the model of neo-sobriety, millennials are ready to focus on quality wine, with a model of consumption of virtuous wine, opposite to that of intense, concentrated and very high consumption of the peers of Northern Europe.

Moreover, interesting data comes from e-commerce, which can, therefore, contribute significantly to the strengthening of classic commerce with multiple benefits not only for consumers but also for online stores.

In the case of users, it is evident the possibility of having a greater choice as well as that of being able to buy products in some cases difficult to find. On the other hand, e-shops should not neglect the opportunity to expand their market, possibly even abroad. Digital consumers are increasingly and potentially also interested in the wine category and all the other typical categories of made in Italy.

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[23] IL VALORE ECONOMICO E SOCIALE DEL SETTORE DEL VINO E DEI SUOI PROTAGONISTI, www.cittadelvino.it/download.php?file=il-valore...e-sociale-del...del-vino...dei..., (Accessed October 15, 2018).
[24] https://www.idealo.it/magazine/2018/06/13/consumo-vino-rosso-bianco-italia-europa/ , (Accessed October 15, 2018).

2.5 Organic wine

The European regulation 203/2012, published in the Official Journal of the European Union on March 9, 2012, displays new rules for the production of organic wine products.

A wine is called "organic wine" when:

- In the vineyard: we produce organic grapes, grown without the help of synthetic chemicals (fertilizers, herbicides, fungicides, insecticides, pesticides in general) and without the use of genetically modified organisms.
- In the cellar: vinification is produced by industry 203/2012.

The wine producer who complies with the standards set by the regulation receives a certificate of conformity from a certification body and can use the word "organic wine" and bring the European logo on the label.

The success of wine in the next five years will be determined largely by what is the "green" market, ie organic and/or sustainable wines.

In the foreground, in the first quarter of 2018 Nielsen data shows that wine consumption is basic: 41% of Italians (18-65 years old) have consumed, at least once, at home or away, a wine with an organic brand. In 2013 the consumption of organic wine involved only 2% of the population, also thanks to the Italian choices that point to the "organic" with a really significant growth of the vineyard (+ 175% in the last 10 years). In Italy, in the first quarter of 2018 organic wine sales achieved only € 21.6 million in GDO, recording a + 88% compared to the same period of 2017 (compared to a more lukewarm + 3% of wine sales in general), Abruzzo stands out as the first region of Italy for sales of organic wine in GDO, reaching almost 4 million euro (+ 38% compared to the previous year), followed by Veneto, Tuscany and Sicily with a turnover of over 3 million euros. The favorite product is red, red wine is still the type of organic wine preferred by the Italian consumer (49% of organic wine sales in GDO, with an increase in sales with a value of + 72% compared to 2017), also the white wines grow more significantly (+ 151%). The success that finds justification in the strong appreciation that is the value of organic wine, is a value for the environment lower for the environment (76% of users identify the main distinctive element in this factor), wholesomeness (61%) but also authenticity (50%).

Organic wine in Europe and Italy

Turning now to analyze the global organic market, as reported in the 2018 report of "The world of organic agriculture", presented last February at the International Biofach Fair in Nuremberg, the organic in the world in 2016 has created a turnover of over 80 billion euros. In terms of consumption of organic products, after the United States with around € 39 billion, Europe is the world's largest, with an annual turnover of approximately 33.5 billion euros, and

numbers almost doubled in a few years. Spending on consumption of organic products is also among the highest in the world. In fact, in the EU the annual per capita expenditure is 61 euros. In 2016, the extension of organic farmland in Europe was 13.5 million hectares (12.1 mln ha in EU, almost 90% of the entire continent). The first three countries with the largest area are Spain, Italy, and France. Almost half of the European Union's organic farmland (45%) is in these countries Figure 2.5.

Figure 2.5 Distribution of organic farmland by country 2016 in Europe (left) and EU (right)
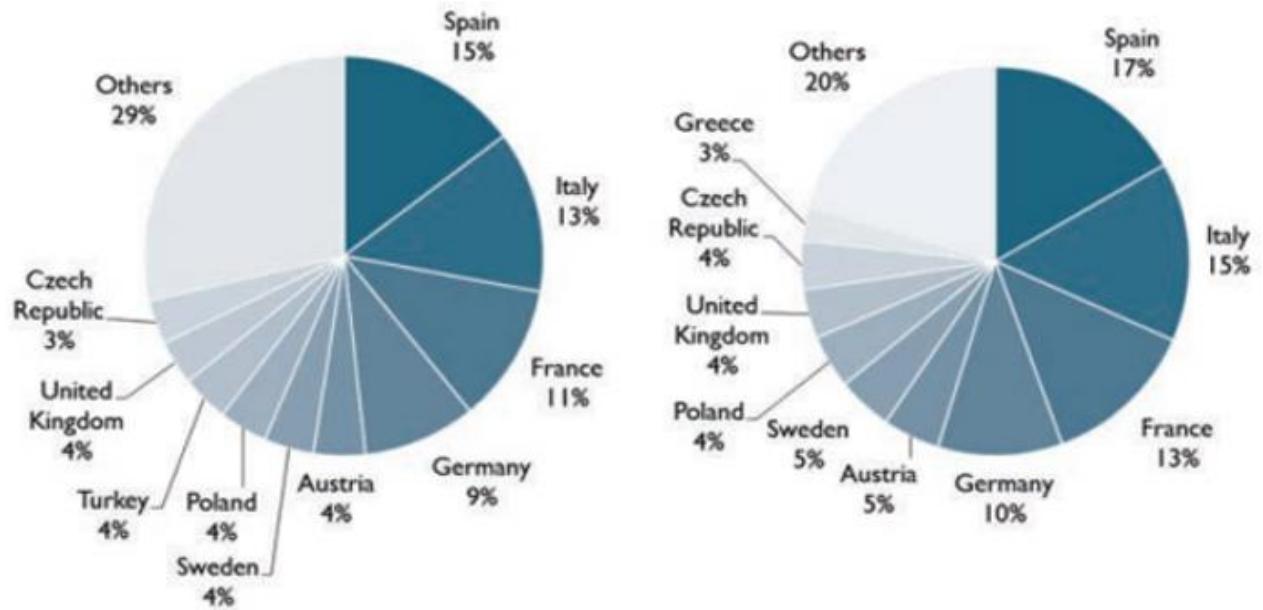
Source: "The world of organic agriculture, statistic & emerging trends 2018"

However, the organic farmland in Europe represents only 2.7% of the total agricultural land, with a greater percentage concerns the European Union (6.7%)[25] and, as we can notice from the map, a higher concentration (>10%) in the alpine countries (Switzerland, Austria, Liechtenstein and Italy) and some countries bordering the Baltic Sea (Norway, Finland, Latvia and Estonia). Hence, a larger extension of organic farmland is located in the central-western part of Europe, thanks to the presence of the first three countries (Spain, Italy and France) by extension, countries included in the EU, with a remarkable difference with the eastern countries, as we can notice from the Figure 2.6.

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[25] The World of Organic Agriculture 2018, https://www.organic-world.net/yearbook/yearbook-2018.html, (Accessed October 19, 2018)

Figure 2.6 Organic agricultural land in the countries of Europe 2016 (hectares)
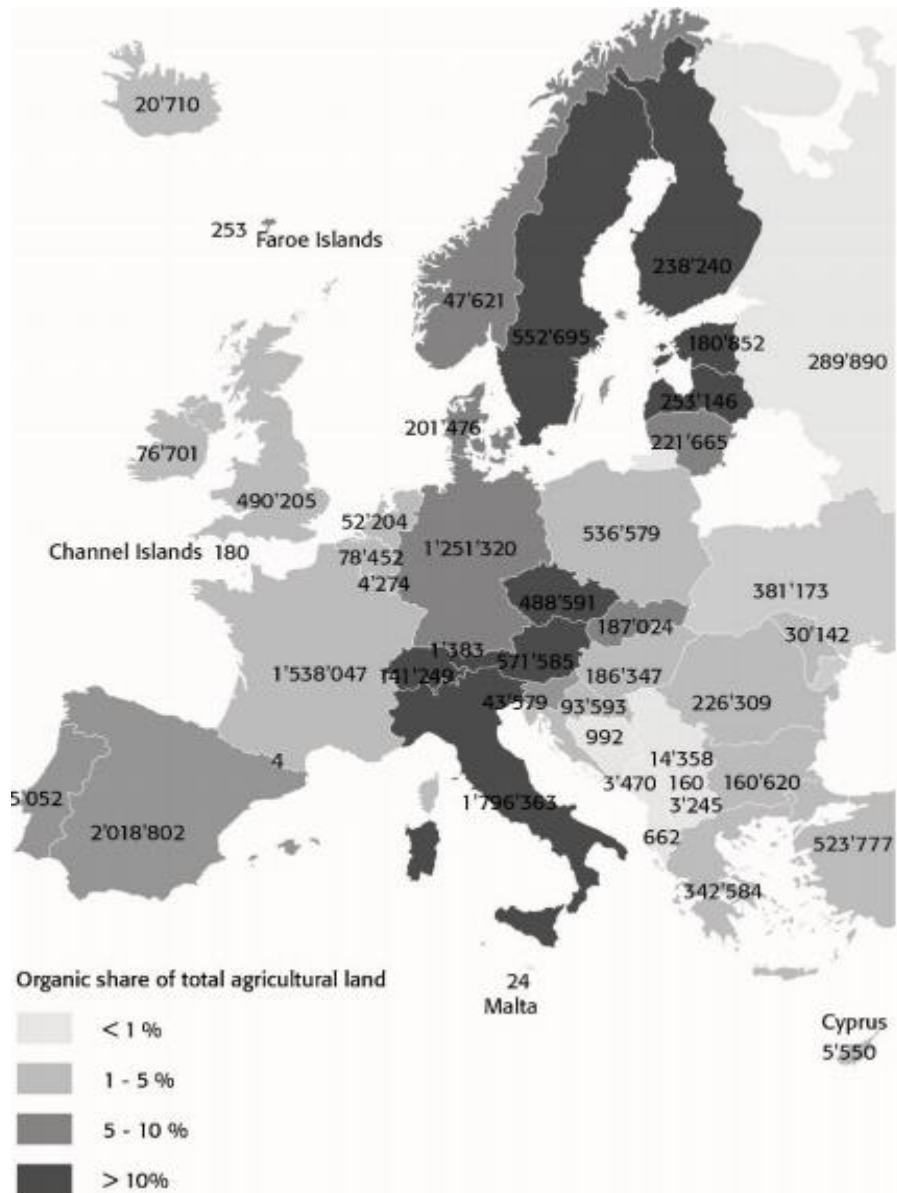
Source: "The world of organic agriculture, statistic & emerging trends 2018"

In 2017, according to the elaboration carried out by SINAB, only 5.5% of the Italian organic sector is made up of lands reserved for vineyards (105,384 ha), with a moderate growth of 1.9% compared to the previous year. Analyzing the official statistics of the organic wine sector, these all show a constant growth trend both for the vineyard and the grape production, which in recent years, both in Europe and in Italy (Figure 2.7) have been converted to organic agriculture.

Figure 2.7 Grapes: Development 2004-2016
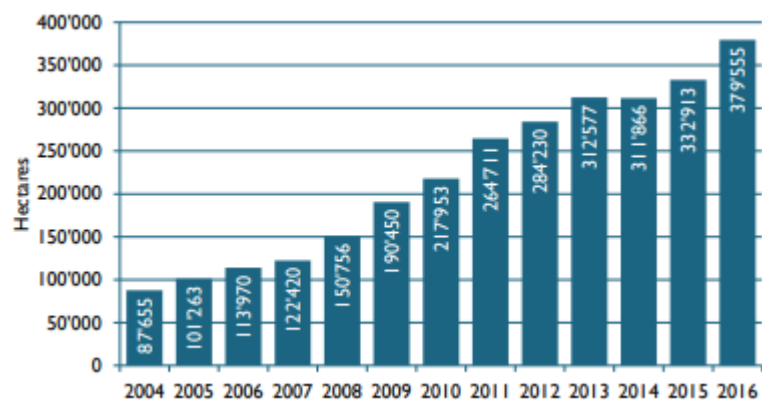
Source: "The world of organic agriculture, statistic & emerging trends 2018"

According to FiBL & IFOAM (2018), in 2016 the total European area invested in organic vineyards, both organic and in conversion, is equal to 379,555 hectares. As we know, Spain is the leader of the ranking with 106,720 ha (2016), followed by Italy and France. They together represent around 3/4 of the worldwide organic vineyard is held by Spain, Italy and France.

The organic farmland in Italy is 105,384 ha total, of which 70,791 has already been completely organic vineyards, while the other 34,593 ha are in the process of conversion. In the last year alone, the organic vine area in Italy rose only by + 1.9 % compared to 2016 (Table 2.5).

Table 2.5 The Organic vineyards and the process of conversion

	Superficie in conversione	Superficie biologica	Totale 2017	Totale 2016	Var.%'17-'16
Vite	34.593	70.791	105.384	103.545	1,8
Vite da vino	33.782	69.425	103.207	101.289	1,9
Vite per uva da tavola	810	1.367	2.177	2.257	-3,5
Vite per uva da essiccare	0	0	0	0	-

Source: My elaboration on Sinab, Bio in cifre 2018 anticipazioni

Grapes account for 2.1% of the total Italian organic grape area. The growth in the sales of organic wine has been associated to the relative increase in extension area, as we can notice in some Italian regions (Veneto) that are increasing and making the most of their cultivable areas in order to increase even more the notoriety and excellence of their products (Prosecco), due to an ever-increasing demand from the market. In fact, during the international vinitaly event, the President of the Veneto Region, Luca Zaia said: "Organic wine is a great opportunity for the region, consumers and producers. Organic farming is a sector that is growing at double figures every year, and this is the clearest answer that can come from the market. The Veneto

is adjusting quickly so much that in a few years it will make news that does not produce organic wine. For its part, the director of Veneto Agricoltura Alberto Negro reiterated that: The survey conducted by the regional agency aimed at highlighting how important it is for the wine sector the sustainability and traceability deriving from organic production".[26]

The growth in organic wines is much higher from the alienation of organic wines and sparkling wines. In fact, for these products, the annual variation in the first half of 2018 was + 49.3%. Figures are absolutely relevant if we take into account that in the same period of time the "non-organic" wines and sparkling wines have increased only by + 4.5%, emphasizing, even more, the attention on the growing trend of organic in Italy (Table 2.6).

Table 2.6 The wine organic growth compared to non-organic wines

	Var.% I semestre '18/'17			
	BIO		AGROALIMENTARE	
TOTALE	11,5		2,5	
di cui:				
VINI E SPUMANTI	49,3	↑	4,5	↑

Source: ISMEA elaboration on Nielsen source, Market track (RMS)

The organic vineyard currently present in the national territory is around 15% of the total area under vines.

Veneto, with a total of 4,728 hectares (4.5% of the total) of organic vineyards, is ranked fifth in terms of area, behind Sicily (35,939 ha), Puglia (16,327 ha), Tuscany (13,477 ha) and, a little later, in the Marche (5,325 ha). In addition, 4,728 affected by vineyards operating in the Veneto organic system represent 5.6% of the entire regional vineyard area, although this figure shows a small incidence compared to that found in other regions such as Puglia (19.1%), and Sicily (33.7%).

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[26] VENETO AGRICOLTURA, Il vino biologico veneto,http://www.venetoagricoltura.org/2018/04/news/vinitaly-il-vino-bio-veneto-sotto-i-riflettori/, (Accessed October 20, 2018).

Figure 2.8 The surface in hectares of organic vine area in the various Italian regions (2016 vs 2017)
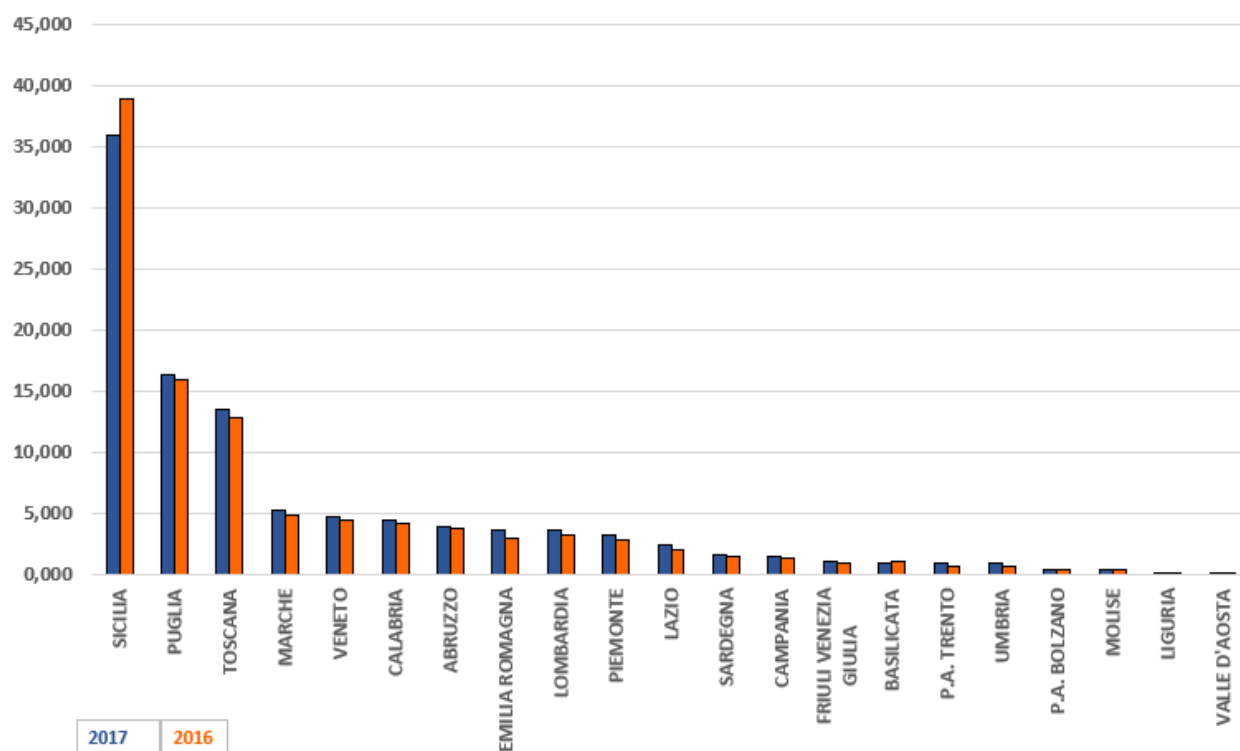
Source: My elaboration on Sinab 2017/2018 data

In the vine area cultivated with the biological method, the regions that grew the most between 2016 and 2017 were P.A. Trento (36%), Umbria (36%) and Valle d'Aosta (27%).

2.6 The supply chain and its operators

Winery supply chain

Wine is an agri-food product that is subjected to different processing stages so that the finished product can be obtained from the grapes. The different phases and activities that make up the entire process constitute the wine production chain.

Wineries play a significant role in the Italian economy. The **wine production and distribution process** consist of distinct phases and activities:

- the agricultural phase (grape harvesting activity);
- the transformation phase (production, conservation and bottling of wine);
- the distribution phase (retail, large-scale retail trade, specialty shop).

Figure 2.9 Winery supply chain
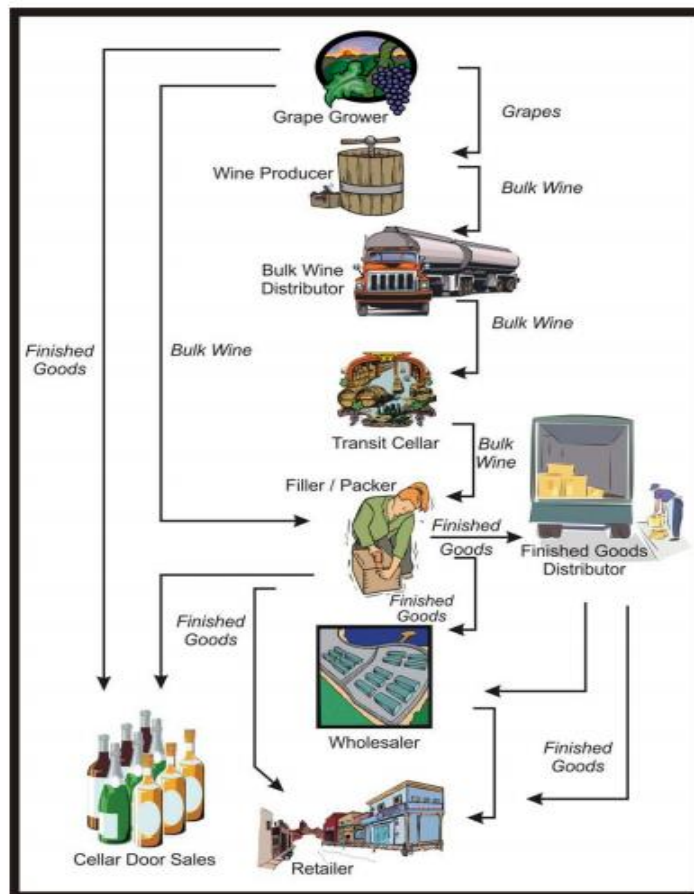
Source: Wine Supply Chain Traceability GS1 Application Guideline

The **agricultural phase** is characterized by three different constraints:

- biological (time of production, one year);
- the land tenure (quantities of production);
- the climate (cyclicity).

In the typical production processes of the agricultural phase, two distinct operations are performed:

- the plant and the development of the vineyard;
- grape production.

The first one concern a set of actions that require a period of time to complete them; since the time necessary for a vineyard to offer its production is not less than four years (useful life 20-25 years). The production of grapes takes place only once during the year and is carried out through a series of different operations, on a cyclical basis.

The wine production activity is characterized by two elements:

- production times, which can vary from a few months to several years depending on the type of wine produced;
- the annual cycle of production, which makes the raw material once a year.

The second phase of the supply chain regards the "transformation" (production, conservation and bottling of wine). The conservation and bottling of wine have the function of preserving the finished product to be used for bottling and subsequent packaging.

The last phase of the wine supply chain is represented by the commercial distribution of the finished product. The distribution choices in the wine sector can include:

- Direct sales (sales point or firm website);
- Sale through distribution operators (large-scale retail trade);
- Sale through specialized operators (wine bars, wine shops, etc…);
- Sale through the circuit of hotels, restaurants and catering operators (Ho.re.ca.).

All these channels allow the company to choose one or the other distribution method. An element that distinguishes the choice is the quality of the product. To make visible and appreciate the prestigious wine, companies direct its distribution through the circuit of specialized operators (wine bars, wine shops, etc…); or through the circuit of hotels, restaurants and catering operators (Ho.re.ca.). This gives obvious advantages in terms of differentiation, as it enhances the qualitative component of the product and its recognizability.

In 2017, in fact, in Italy, the sale of fine wine (over 25 euro per bottle) went through the distribution channels that most prefer the transmission of values and information on the organoleptic characteristics of the product such as Ho.Re.Ca. (37.0%), wine shops (23.6%) and direct sales (18.8%) sold on total sales of fine wine. Conversely, the large-scale retail trade has reported only a portion of 3.3% of total sales of fine wine.[27] Furthermore, wine shops or hotel

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[27] http://www.inumeridelvino.it/2018/06/i-canali-di-vendita-del-vino-e-tipologia-di-etichette-indagine-mediobanca-2017.html#more-22392, (Accessed October 21, 2018).

or restaurant, are interested in offering its customers a product that can complete the consumer experience that is offered to them, avoiding the presence of the same product on the shelves of the large-scale retail trade, to increase the reputation of the producer and his wines. However, the new needs of consumers, more and more inclined to experiment new products and more informed before the purchase is leading the large distribution to respond to the changing needs of customers, focusing on a wider range both vertically and horizontally, allowing large retail scales to capture and present the most prestigious brands, at the same time present in other channels. The difficulties are not lacking, the creation of relationships of trust with the large wine producers are still difficult to establish, betraying the image of a high-end product whenever they use the promotional lever, determining in the mind of the consumer an improper awareness of the value of the asset purchased. On the other hand, the producers are still wary because the management in terms of communication and reputation that enjoys a wine of excellent quality must be flawless.

A certain level of competence, professionalism and clarity is needed in the management and communication of the characteristics of the various products along the hierarchical chain; earn the full trust of the most demanding customer, who pretends service and wines treated with the required care to ensure that they arrive on their table in the best conditions of conservation. Matteo Lunelli, president of the Ferrari winery, says: "The HoReCa (Hotel, Restaurants and Catering) and, in particular, the starred restaurant sector, will continue its rapid growth driven by the consumption of wine. The excellent catering will, therefore, be an opportunity for business growth and, above all, for further improvement in positioning for high-end wines".[28] Wine operators could be to obtain economic returns also exploiting the firm sales point or specialized retail[29], even though it becomes quite burdensome for small companies to manage the organization and the sales phase. Instead, some companies prefer to choose large-scale retail trade or traditional retail, because of the production of large volumes of low-medium quality wine. However, when there are a lot of small producers that want to take up room on the shelf, the large-scale retail trade can impose the conditions in terms of price/quality. In addition, the pressure on profit margins can limit the access and foster the exit of producers from the market.

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[28]http://www.repubblica.it/economia/rapporti/osserva-italia/il-vino/2018/07/02/news/_cosi_i_ristoranti_trainano_le_etichette_d_eccellenza_ora_dobbiamo_lavorare_sul_posizionamento_di_mercato_-200610455/ , (Accessed October 21, 2018).

[29] A. D'Amato, 2013 – La gestione finanziaria delle imprese vitivinicole: Valutazione degli investimenti e creazione di valore p.17

The operators and the different economic realities of the wineries

There are many operators and companies operating along the supply chain. A first classification could concern the distinction of companies according to the phases of the wine production chain:

- Producing or agricultural companies (grape harvesting activity);
- Industrial companies (transformation of grapes into wine or winemaking);
- Commercial companies (conservation and bottling of wine).

This singular distinction does not prevent companies from identifying themselves in a single class. In fact, some companies incorporate and integrate all the phases of the supply chain (from the production of grapes to the bottling). The latter is defined as "winemaking enterprises".

A clearer distinction is made in the division of the wine sector according to a legal and at the same time dimensional perspective. Following we will have:

- Small and family-owned companies;
- Cooperative companies;
- Partnership (e.g. limited liability partnership) and limited company (S.P.A.) of a lucrative nature.

Small and family-owned companies

As we all know, the majority of Italian companies are small to medium-sized, totally matched also in this sector, characterized above all by the diversity of products linked to the surrounding territory and to the region they belong to. When, it turns out to be misleading for a company, the integration of all the activities that make up the wine supply chain, as it would lead to a complex economic and organizational structure for limited entities, causing structural inefficiencies and a related increase in operating costs. The specialization for individual phases, in fact, has allowed the operators of the sector to reach levels of efficiency and productivity, organizational efficiency, contributing to the development and evolution of individual companies. However, the size does not allow companies to be internationally competitive, as the little differentiation of products and the continuous downward stroke of price leads small companies to see their profit margins shrink or cancel.

Cooperatives companies

The wine cooperatives, called "social wineries", are societies with a mutualistic purpose whose management is addressed to the members of the wine cooperative who give the grapes to the company at more advantageous conditions than those offered by the market, then dealing with them. same of the phases of vinification, bottling and distribution. The remuneration of the shareholders does not take place through the distribution of profits as in the lucrative

companies, in our particular case limited companies, but through the payment of the goods conferred and by the remuneration for the work performed by the conferring partners.

The reasons for the success of the cooperation in the sector of reference, reside in the resolution of problems related to the pulverization of the Italian wine industry, formed by a myriad of small family businesses. In fact, the cooperative allows to maintain the identity of the family company within it, but overcoming the weaknesses linked to the quantitative dimensions of the products conferred necessary both to exploit the economies of scale and to contain the power of the buyers, but also to the different degree of differentiation of grape types and competences made by the contributors. For these reasons, the approximately 500 social wineries have allowed the production of almost 60% of Italian wine, despite their small number (1.4%) compared to the total number of Italian wineries. Their valorization of the entire production process and compliance with the quality standards of the product with an increase in the production of DOP wines, allowed them to be present not only in the domestic market (turnover 4.5 billion euros, 44% of turnover of national wine), but also at international level (export value of 1.9 billion euros, equal to almost a third of the value of Italian wine marketed abroad) offering the market excellent products at more competitive prices.[30]

Limited companies

Companies set up in the form of partnerships and capital companies are for profit-making purposes, unlike cooperatives. Generally, these are companies that have acquired a certain thickness have a prominent role in all the different stages of the supply chain (production, transformation, bottling and marketing), especially in the case of the production of high quality wines, where the customer associates the image of estates with the image of fine wines agricultural properties and, therefore, with vineyards that guarantee a satisfactory quality level of the grapes.

2.7 SWOT Analysis

A SWOT analysis is a helpful tool to generates information in matching an organization or group's goals, programs, and capacities to the social environment in which it operates. It is an instrument within strategic planning. The analysis may relate to the internal environment

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[30] http://www.ansa.it/canale_terraegusto/notizie/vino/2018/04/12/vino-nel-2017-export-cooperative-a-19-miliardi-56_d0c75291-570c-4759-bfcc-7bf10e15e6ac.html, (Accessed October 21, 2018).

(analyzing strengths and weaknesses) or external to an organization (analyzing threats and opportunities).

SWOT analysis may relate to:

- Internal factors (strengths or weaknesses). A strength against a goal may be a weakness for another goal;

- External factors (opportunities and threats) may include macroeconomic issues, technological change, legislation, and socio-cultural changes, as well as changes in the market and competitive position.

SWOTs are used as input for generating creative strategies, using the following questions:

- How can we use and exploit every strength?

- How can we improve every weakness?

- How can we exploit and benefit from every opportunity?

- How can we reduce each of the threats?

The wine sector in Italy was not particularly affected by the economic crisis. The internal market setbacks have been offset by the positive performance on world markets even if there is a need to also focus on domestic demand characterized by a strong reduction in this millennium. Nevertheless, the demand for excellent products is very broad and tends to grow, even if with very different dynamics between various products and this opens up new paradigms of success.[31] Among the most transversal ones are the dissemination of the food culture and the value of typicality; generational change in consumers; climate changes that will have an impact on the vineyard's varietal choices. For Italian wine, it is a great opportunity to be grasped. Countries such as China and India are a continuously growing market, despite the average increase in living standards in recent years, but also in European countries such as Poland, we are seeing a continuous growth of the wealthy class. The choice of the country to which to orient oneself must obviously consider the consumption trends in progress.

Hence, how can Italy exploit and benefit from this consumption trends?

It is going to perform a swot analysis that highlights the main challenges to be faced and objectives to be achieved in a constantly evolving sector. [32]

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[31]Ismea mercati, *Scheda di settore, Vino aprile 2018*, pp.41-45
www.ismeamercati.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/3525 , (Accessed October 21, 2018).

[32] Swot analysis will be based on the data provided by ISMEA (Institute of services for the agri-food market) for the Italian wine sector, in the sector report April 2018.
www.ismeamercati.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/3525, (Accessed October 21, 2018).

Strength

- Italy of wine is a winner for diversity, from the vineyard to the bottle;
- The quality and the link with unique territories;
- Great is the appeal of Made in Italy, of the culture and heritage of the Belpaese;
- The Italian DOs constitute a highly controlled quality assurance
- The Single Text of Wine will simplify the obligations for Italian companies, improving their competitiveness;
- Community legislation is increasingly oriented towards promotion and investments that Italian companies are able to make profitable.
- Italy has consolidated top positions in the main international markets;
- Italian exports are registering a growing trend in terms of value and volumes that are increasingly shifting towards quality products.

Weaknesses

- High fragmentation of operators;
- Inability to "make a system" (logistics, etc.);
- Low production and commercial alliances with foreign companies;
- Lack of internationally recognized brands;
- The Difficulty sometimes in the use of CMO funds;
- Insufficient strategic and institutional coordination of sector promotion and internationalization measures;
- The positioning of Italian wines abroad is not always adequate (excessive competition on price);
- Difficulty in effectively communicating the great diversity and variety of Italian wine (vines, territories, denominations);
- The growth of Italian exports is very linked to the Prosecco phenomenon, while a more intense development of exports would need more "protagonists".

Opportunity

- Search for alternative distribution channels (e-commerce) and short supply chain;
- The EU also makes agreements with third countries to improve business opportunities (CETA agreement with Canada and others being defined);
- Search for unconventional packaging;
- The possibility of penetration and affirmation within new outlet markets;

- Search for healthy and authentic foods;
- Greater attention to ethical and environmental sustainability;
- Strengthening responsible wine consumption;
- Growing affirmation of enoturism: the propulsive role of the territory;
- Change in the mix of products consumed in the internal market and redevelopment towards higher-end products.

Threats

- Uncertainty linked to the geopolitical situation such as the conditions of Brexit and US neo-protection policies;
- Imbalance of the contractual position for the benefit of the large-scale retail trade;
- A significant presence of large groups and multinationals in the foreign wine industry;
- Constant decline in consumers and imbalance between supply and demand;
- Increasing competitive pressure, complexity for SMEs;
- Competition of new producer countries and new products (varietals);
- The new producer countries are not looking to and intensify commercial agreements for free trade (Trans-Pacific Partnership between 12 countries in the area, the Free Trade Agreement between Australia and China, the Chile-China and Chile-Brazil agreements, etc.);
- Difficulties of the EU to conclude free trade agreements;

By the way, Veneto Agricoltura carried out a survey aimed at producers of grapes and organic wine. "Quantitative research, conducted on a sample of 263 companies, has allowed us to outline the main strengths and weaknesses, of the organic wine market for Veneto producers and processors."[33]

Among the organic strengths:

- the lower environmental impact;
- the improvement of biodiversity;
- significant improvement in working conditions;
- healthier product (understood as the absence of phytosanitary residues).

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[33] VENETO AGRICOLTURA, Il vino biologico veneto, http://www.venetoagricoltura.org/2018/04/news/vinitaly-il-vino-bio-veneto-sotto-i-riflettori/ , (Accessed October 21, 2018).

A market that is still growing, but which still has weaknesses

- The need for greater workforce
- The need for high professionalism
- Bureaucratic management of certification;
- Variability of yields;
- Variable prices of grapes;
- A reliable and unstructured supply chain
- Low awareness of consumers towards the organic production system,
- High consumer cost compared to the conventional since the organoleptic characteristics of the organic product does not increase the organoleptic quality of the wine.

Researches indicate a high degree of penetration of organic products in Italian domestic consumption, albeit with a still low consumption frequency.

An opportunity for differentiation and growth for small and medium-sized businesses as well as a prompt response to market demands.

2.8 The characteristics of the Italian wine sector and earnings management practices

After the recession that occurred after the financial crisis of 2007-2008, the Italian agro-food sector is going through a new phase of growth. Among all the sectors, the one that showed greater growth, above all for organic products (+ 175% in the last 10 years), is the wine sector. This represents the spearhead of the Italian food Agri sector. Despite the fact that wine consumption has decreased, the new category of consumers (millennials) has focused on more virtuous consumption, aiming at buying a more quality product. Furthermore, the reduction of cultivable wine-growing areas, after the entry into force of the European regulation no. 1308/2013, had a significant impact on the quantity of wine produced by the winemakers. Therefore, the growth has been justified by a greater propensity of Italian winemaking companies to enhance our local products, leading companies to register higher margins, focusing more on quality than quantity.

The MedioBanca survey on the wine sector reported the following data:

- ROI (6.8% in 2016), growing in the last 5 years (only 4.9% in 2012);
- ROE which grew up to 7.9% in 2016, compared to 3.1% in 2012. A percentage reduction of loss-making wineries (11.6%);

- The financial structure is solid with financial debts that in 2016 represent 63.4% of equity (minimum of five years, compared to 76.3% in 2012).[34]

These data show a general improvement in the conditions of profitability, a more solid financial structure and less subject to the external environment. Therefore, most wineries are destined to grow in the coming years. Growth can be affected by periods of uncertainty (extreme weather conditions such as landslides, floods that can cause significant damage at local level) resulting in a reduction in profits or losses for that period, which would have a negative impact on the growth path. This volatility of profits is perceived as a factor of greater corporate risk, with the consequent increase in the cost of invested capital.

Among the various risk factors that can lead to greater recourse to earnings management practices, it is possible to report:

- A growth in the investment of Italian wineries, with an increase in the accumulated depreciation resulting from the purchase of new machinery that would substantially increase the amortization cost item)

- a greater number of Italian wineries exporting abroad, with a probable increase in the risk of doubts receivables, deriving from the quality of net accounts receivables and deferred revenue.

- a strong increase in competitiveness, with a general increase in capitalized promotion costs.

In addition, wineries that have a biological line present greater risks related to meteorological factors, damage, floods. The occurrence of these events in the regions with the greatest concentration of companies (Veneto, Tuscany and Piedmont), would influence the dynamics at the general level, as they make up the majority of Italian wine production (almost 60%).

These events, leading some companies to efficiently share the losses in the following years in order not to increase the company growth path, avoiding the reporting of strong losses, with the consequent fiscal advantage resulting from lower taxation in the following years.

Cooperatives versus Limited Companies

Another aspect to consider is the distinction between the different types of companies. In particular, it is necessary to make a distinction within the wine sector between the various types of wineries, since the different company behaviors lead to different results in terms of economic performance (profits). The main distinction concerns cooperatives and limited

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[34]Mediobanca (2018), *INDAGINE SUL SETTORE VINICOLO*, pp.1-17
https://www.mbres.it/sites/default/files/resources/download_it/Indagine_vini_2018.pdf, (Accessed November 23, 2018).

companies. As we all know, the remuneration of the shareholders does not take place through the distribution of profits as in the limited companies, but through the payment of the goods (grape or must) conferred[35] and by the remuneration for the work done by the transferring partners.

Therefore, indicators such as ROI and ROE, which are well suited to limited companies, have a different meaning in cooperatives and are not very informative as they fail to return a correct assessment of corporate performance. The evaluation of profits must take into account the fact that their prevalent mutuality and the non-profit-making purpose ", leads to low-profit percentages, as the possibility of redistributing profits to members is limited.

Hence, on the basis of MedioBanca data, the two forms "cooperatives and companies", present some differences in terms of profitability, financial and production structure. The cooperatives, respect to the limited companies, show the following data:

- A lower presence of fixed assets deriving from use in the collection or production phase (the upstream phases of the wine production chain);
- Reduced capitalization and with financial debt equal to 115.8 % of own assets against 48.3% of the other companies;
- ROI of cooperatives (2.9% against 8.7%) and ROE (3.3% versus 9.5%), highlighting the substantial difference in terms of profitability, with values three times lower than in limited companies.[36]

Therefore, as we can see from the values observed, returns accounting values, which are scarcely representative of operating income and net income, determining profitability index different from those usually found in limited companies.

Considering at the level of cooperatives, there is a different use of machinery, as cooperatives sometimes leasing equipment and machinery to other companies. This entails greater wear and with a higher percentage of depreciation to be spread over the various periods, increasing the item costs and consequently reducing the earnings.

In addition, recent studies show that agricultural cooperatives manage their results in order to avoid reporting decreases in profits and small losses, above all, they avoid in a clear way to report small losses.

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[35] Which is represented in the item costs of raw materials, is indirectly remunerated through the sale of products on the market.

[36] Mediobanca (2018), *INDAGINE SUL SETTORE VINICOLO*, pp.1-17
https://www.mbres.it/sites/default/files/resources/download_it/Indagine_vini_2018.pdf, (Accessed November 23, 2018).

2.9 Hypothesis development

The study aims to enrich the understanding of earnings management practices in the Italian wineries, a sector with high added value which is the spearhead of the Italian agri-food sector. The phenomenon of earning management has been well discussed in the literature. Among the various accruals-based models, the most reliable and accurate was considered the Modified Jones model, which states that the Discretionary Accrual, as a proxy of earnings management, are explained by some variables (change in revenues, credits and PPE). The presence of Discretionary accruals becomes indicative of earnings management and significant when the values of this error in the model grow. Assuming that, in companies with higher discretionary accruals, they are much more likely to engage in earnings management than a firm with low discretionary accruals, reducing the reliability and the value-relevance of earnings.

The wine sector in Italy is going through a phase of growth, with margins of increasing profitability and a market that leads companies to focus on the production of a quality product. A steady growth, at the company level, is seen positively, signaling to the market the stability and future prosperity of the wineries. However, the wine sector is characterized by a high level of uncertainty deriving from the external environment and the meteorological conditions that affect and have its effects especially on small companies, as subject and dependent on external conditions because they lack abundant resources to cover possible instability in the market and in this sector. Therefore, growth levels could suffer a setback, undermining the company's value and the ability of the manager to manage the company in the best possible way. As a result, the wineries will have a reduction in profits or a loss in that period, with a negative impact on the growth path, recording a fluctuating and volatile economic result, perceived as a factor of greater corporate risk, with the consequent increase in the cost financial resources, further penalizing the growing wineries. This offers managers the opportunity to manipulate profits, either efficiently or opportunistically, in order to have a linear performance of earnings, postponing any loss or reduction in earnings in subsequent years, supported by a more difficult activity in identifying the management of earnings in growing companies compared to mature companies. When this happens, according to the approach theorized by Burgstahler and Dichev (1997), the earnings distribution approach, the frequency of distribution of earnings will show a certain gap or discontinuity between the interval just below zero (small losses) and the area just above zero (small earnings).

Therefore, in the analysis of the sample of wineries we will have an asymmetric distribution of the observations, with a greater presence of cases to the right of the zero earnings

thresholds. The strong and significant presence of discontinuity of observations in the areas adjacent to zero is indicated as a signal of possible earnings management. This meadow has been extensively documented in all the countries in which it has been explored. The first hypothesis will be:

- *Hypothesis 1: Italian wineries with small losses manage earnings upward, just above the zero thresholds.*

As claimed by previous research (Coppens and Peek, 2005) private companies in Italy, as well as the Italian wineries, prefer to avoid reporting big changes in profits, in order to level the profits in the future (earnings smoothing), showing discontinuity in the frequency of distribution of changes in earnings, with a greater concentration of observations in areas close to zero earnings changes and above all in the first positive earnings changes interval.

The Italian wine sector could present some practices rather than other ones which manage earnings to avoid earnings decreases, recurring practices in countries where there is a highly developed capital market and there is no alignment between the tax system and the accounting system (UK and Netherlands), according to Coppens and Peek (2005).

- *Hypothesis 2: Italian wineries manage earnings to avoid large and negative earnings changes.*

The external conditions and the periods of uncertainty, as summarized, could have different effects according to the companies, but above all in terms of the size of the company turnover and of the resources held. Moreover, the biggest wineries are presumed to be more efficient and profitable than the smaller ones, having lower costs thanks to the economies of scale, but also greater bargaining power with suppliers, consumers and banks. This means that other variables and factors come into play in determining the performance of a company (financial debt, available cash flow). The implementation of earnings management practices in Italian wineries can have a positive impact on productivity, profitability. Therefore, the difference in terms of results will be investigated according to the company size.

The third hypothesis will be:

- *Hypothesis 3: There is a significant difference in manage earnings among different size's classes of Italian wineries.*

Another aspect to consider is the distinction between the different types of companies. In particular, it is necessary to make a distinction within the wine sector between the various types of wineries, since the different company behaviors lead to different results in terms of economic performance (profits). The main distinction concerns cooperatives and limited companies. As

we all know, the remuneration of the shareholders does not take place through the distribution of profits as in the limited companies, but through the payment of the goods (grape or must) conferred[37] and by the remuneration for the work done by the transferring partners.

Thus, indicators such as: ROI and ROE, which are well suited to limited companies, have a different meaning in cooperatives and are not very informative as they fail to return a correct assessment of corporate performance.

In addition, cooperatives present some differences in terms of profitability, financial and production structure (Lower presence of fixed assets deriving from use in the collection or production phase (the upstream phases of the wine production chain).

In the peculiarity of this type of company, the cooperatives, the phenomenon of learning management does not matter. However, in order to separate the limited companies from the sample and have a clearer view of the earnings management practices for both types of companies, it was decided to investigate whether there are substantial differences that make it possible to affirm a significant presence of the practices. of earnings management in limited companies

The fourth hypothesis will be:

- *Hypothesis 4: There is a significant difference in manage earnings in Italy between cooperatives and limited companies.*

A further analysis will cover the individual fiscal years, reporting the results if there are significant differences between cooperatives and limited companies in some specific periods.

- *Hypothesis 4A: There is a significant difference in manage earnings in Italian between cooperatives and limited companies in different fiscal years.*

Finally, the size and characteristics of the company differ depending on the region or area they belong to. The wineries in the north are characterized by a greater logistic network, by a greater number of bottling companies and above all in terms of size, allowing them a greater propensity to export, with a consequent increase in credit risk, which favors greater recourse to earnings management practices.

So, it was decided to detect whether there is a significant difference in manage earnings between the northern Italian wineries and the remaining wineries belonging to the central south.

- *Hypothesis 5: There is a significant difference in manage earnings between wineries of distinct areas of Italy.*

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[37] Which is represented in the item costs of raw materials, is indirectly remunerated through the sale of products on the market.

3. **Empirical analysis of Italian wineries**

3.1 Selection criteria and classification of the sample

In this document, we undertake a large, broad sample study of Earnings management activities. A main reason for carrying out this study is to shed light on the fact that Earnings management practices are present not only in the case of listed companies in which managers encouraged to maximize their utility by associating power, prestige and wealth with the positive trend of a company in constant growth, but that is present in the smaller realities where the economic-productive variability could present itself in a more accentuated way. Thus, the use of earnings management practices would improve the current situation to reflect the future prospects of companies. We also present evidence that a large degree of revenue management occurs in small businesses and companies with low profitability.[38] Therefore, our study of Earnings management investigates the breadth and scope of behavior in a fairly small context, through a comprehensive analysis of the earnings reported in the wine sector. As we know, the sector is characterized by a lack of homogeneity of companies in the dimensional and structural context. Most companies in the sector are micro-enterprises in the form of partnerships, which represent only a small part of the sector's revenues, often dealing only with the wine grape production process, while it is up to other companies to processing grapes into wine, preserving and bottling. Being aware of the fact that small companies are facing ever more fierce competition in terms of product price, especially outside national borders, the need to study if the size can and to what extent, influence the performance of companies in the sector it is essential.

The source used to obtain the information and data is the AIDA database[39] (which provides accounting information on limited companies and Italian cooperatives). In the research strategy, it has been taken into account, only the cellars with last reported turnover equal to and greater than two million euros, considering only the companies in the wine sector. The initial sample of the AIDA database is made up of 4764 companies, the subsequent complete collection of data and information necessary for the analysis work reduced the final sample to 509 wineries, since many of them had a turnover lower than our lower limit (2 million) or

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[38] The research carried out was rather limited, as the selected sample is restricted to only one sector of Italian companies.

[39] AIDA is a database containing financial, personal and commercial information on over 200,000 equity companies operating in Italy. http://bibliotecadigitale.cab.unipd.it/risorse-metalib/000013674, (Accessed October 22, 2018).

because in some years some fundamental information (e.g. earnings or cash flows) was missing during the entire period considered, as we notice from Table 3.1

Table 3.1 The sample research of the Italian wineries

Product name	Aida		
Update number	261		
Software version	102.00		
Data update	22/10/2018 (n° 26103)		
Export date	22/10/2018		
Cut off date	31/03		
		Step result	Search result
1.	NACE Rev. 2: 0121 - Growing of grapes, 1102 - Manufacture of wine from grape	4.764	4.764
2.	Number of employees: All companies with a known value, 2017, 2016, 2015, 2014, 2013, 2012, 2011, 2010, 2009, 2008 for at least one of the selected periods	1.245.018	3.823
3.	TOTAL ASSETS (th EUR): 2017, 2016, 2015, 2014, 2013, 2012, 2011, 2010, 2009, 2008 for at least one of the selected periods, min=2.000	224.328	1.610
4.	Revenues from sales and services (th EUR): 2017, 2016, 2015, 2014, 2013, 2012, 2011, 2010, 2009, 2008 for at least one of the selected periods, min=2.000	160.101	764
5.	Selected companies: (255 deleted)		255
	Boolean search: 1 And 2 And 3 And 4 And 5		
		TOTAL	509

Search: AIDA database

Excluding the company MASI AGRICOLA S.P.A., the companies considered are private companies, as they are not listed on the stock market. This could allow capital providers to have a greater and more active role in management. Besides, the financial statement is not distributed to the public, so they are more likely to be influenced by fiscal marks, as often happens in countries such as Belgium and our Italy, where "a close alignment between tax and accounting systems fosters the presence of fiscal incentives" (Ball and Shivakumar, 2005). Specifically, the companies that make up the sample are the result of a selection in the AIDA Bureau van Dijk database according to two types:

- belonging to class 0121. growing of grapes (ATECO CODE 2007);
- according to ATECO CODE 2007, 11.02 that includes the economic activities consisting of production of wine: table wine, wine v.q.p.r.d. (quality wines produced in specified regions), sparkling wine and other special wines.

The analysis is then of the multi-period type, in fact, for each company the financial statements relating to the years ranging from 2008 to 2017 have been revised, as it is believed that only

data complete with time series of years would have provided the necessary validity and longitudinal robustness. Therefore, overall, 5090 statutory financial statements have been reclassified extrapolated from the AIDA database for 509 wineries. Going into more detail, Table 3.2 describes where the companies that make up the sample are located according to the size and the place to which they belong.

Table 3.2 Italian wineries according to turnover classes and divided by regions[40]

Size wineries in mln. EUR	Small	Medium	Big	Total wineries
Veneto	37	47	15	**99**
Toscana	46	14	3	**63**
Piemonte	26	16	4	**46**
Puglia	31	12	0	**43**
Emilia-Romagna	21	18	3	**42**
Trentino-Alto-Adige	18	19	3	**41**
Abruzzo	30	5	1	**36**
Sicilia	23	9	1	**33**
Lombardia	20	7	1	**28**
Friuli-Venezia-Giulia	10	6	0	**16**
Marche	12	2	1	**15**
Sardegna	10	4	0	**15**
Lazio	10	3	0	**13**
Campania	7	3	0	**10**
Umbria	6	1	0	**7**
Basilicata	2	0	0	**2**
Molise	1	0	0	**1**
Calabria	1	0	0	**1**
Valle D'Aosta	1	0	0	**1**
Total wineries	**311**	**166**	**32**	**509**

[40] Ministerial Decree 18 April 2005: Having regard to the European Commission Recommendation 2003/361 / EC of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises, published in the G.U.E.E. n. L124 of May 20, 2003, which replaces a European Commission Recommendation 96/280 / EC of 3 April 1996, from 1 January 2005.

In Table 3.2, It can be noted how important is the presence of the Veneto's wineries in the Italian wine sector, since more than a third of the sample turnover is made up of 121 Veneto wineries (3,313,368 th EUR). Following we have: Toscana and Piemonte, land famous for Italian excellence in this sector. To demonstrate a particularly pulverized sector, only in half of the Italian regions (9 out of 20) are present large-scale wineries, with a prevalent presence in northern Italy (26 out of 32).

In this analysis, it is going to examine a sample of 509 Italian wineries (a small part of the total Italian wineries, which represents a large part of the total turnover of the sector). It will be implemented a distinction by size class, following the subsequent classification:

Big-sized company:

- more than 250 employees
- an annual turnover greater than 50 million euros, or a total annual balance sheet greater than 43 million euros;

Medium-sized company:

- less than 250 employees
- an annual turnover not exceeding 50 million euros, or a total annual balance sheet not exceeding 43 million euros;

Small sized company:

- less than 50 employees
- an annual turnover or a total annual balance sheet not exceeding 10 million euros. [41]

The established dimensional classification aims to improve the consistency and effectiveness of policies for SMEs and, consequently, limit the risk of distortion of competition. Therefore, this recommendation is applied to any undertaking engaged in economic activities, including the wine sector.

After describing and representing the sample in discussion, pointing out the dimensional criteria and remarking the division of companies between the different regions of Italy, it is going to see a numerical subdivision of the companies analyzed according to the legal form, also highlighting the total turnover of the sample on the total Italian wine sector (Table 3.3).

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[41] Ministero delle attività produttive, D.M. 18.4.2005 http://www.sviluppoeconomico.gov.it/images/stories/d.m.-18-aprile-2005.pdf

Table 3.3 Sample of Italian wineries, highlighting turnover (th. EUR) and legal forms

Year 2017	Wineries number	Total turnover	Industry (ATECO 2007)[42]	
			0121.	1102.
Cooperatives	185	2,489,441	1,557,699 (124)	931,742 (61)
Limited companies	324	5,756,410	886,449 (99)	4,869,961 (225)
Total	**509**	**8,245,851**	**2,772,563 (223)**	**5,801,703 (286)**

Considering the 2017 financial statements, the total turnover of the entire group of Italian companies analyzed is about 8.2 billion euros, the sample representing around 78% of the entire Italian wine industry.

It will review some valuable information concerning the wine Italian:

- Turnover 10.6 billion (+ 5%);
- Exports 6 billion (+ 6%);
- Production 42.5 million hectoliters (-17%);
- Quality: 70% of the production for wine Docg (73), Doc (332) and Igt (118)[43].

Because the number of wineries varied in each annual data set, the datasets were cleaned in such a way that only wineries that provided financial and operational data for all ten years were kept for analysis. The data provided usable and consistent financial, operational and statistical data for only 509 wineries.

3.2 The results of a consolidated approach

The presence of discontinuity in the frequency of distribution of earnings is a signal of earnings management. In contrast, the frequency of the distribution should be linear (smooth), ie the number of observations expected in each interval is the result of the average number of

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[42] On the left side, ATECO CODE: 0121. Growing of grapes. On the right-side, ATECO CODE:1102. 1102. Production of wines from grapes:
- 11021. Table wine and q.w.p.s.r. production;
- 11022. Production of sparkling wines and other special wines.

[43] COLDIRETTI, Vinitaly 2018: il fatturato del vino sale a 10,6 mld, è record.

https://www.coldiretti.it/economia/vinitaly-2018-fatturato-del-vino-record-a-106-miliardi, (Accessed October 25, 2018).

observations in the two adjacent regions. However, even if the hypothesis of considering the average of the observations of a greater number of intervals, the result produced must not deviate significantly from the expected result.

The analysis of these anomalies resulting from an asymmetric distribution of the earnings will have a graphic representation through the histogram, the analysis is adjusted for outliers[44]. In order to have a first overall overview, it has been summarized the variables object of observation through descriptive statistics (Table 3.4).

Table 3.4 Descriptive statistics								
Financial years	2017	2016	2015	2014	2013	2012	2011	2010
Changes in earnings before extraordinary items scaled by Total asset								
Obs	509	509	509	509	509	509	509	509
Mean	.0010	.0019	.0079	.0034	.0014	.0096	.0066	.0055
Std. Dev.	.0554	.0635	.0516	.0315	.0324	.2013	.0764	.0855
Variance	.0031	.0040	.0026	.0010	.0010	.0405	.0058	.0073
First quartile	-.0019	-.0013	-.0002	-.0009	-.0015	-.0036	-.0030	-.0008
Median	2.85e-06	.0001	.0002	0	0	0	0	.0001
Third quartile	.0056	.0047	.0085	.0058	.0047	.0033	.0045	.0104
Earnings before extraordinary items scaled by Total asset (ROA)								
Obs	509	509	509	509	509	509	509	509
Mean	.0256	.0292	.0293	.0280	.0257	.0242	.0243	.0229
Std. Dev.	.0533	.0458	.0563	.0445	.0467	.0509	.0379	.0443
Variance	.0028	.0021	.0032	.0020	.0022	.0025	.0014	.0019
First quartile	.0067	.0067	.0080	.0071	.0065	.0068	.0072	.0053
Median	.0166	.0192	.0207	.0207	.0204	.0180	.0176	.0170
Third quartile	.0396	.0387	.0401	.0397	.0364	.0335	.0344	.0317

Table 3.4 shows descriptive statistics for the annual and changes in earnings before extraordinary items, scaled by Total asset. It is essential to describe the reasons and considerations made in the choice of variables. Starting from the assumptions initially assumed, it is going to analyze whether there are significant deviations in the detection of earnings and their variations in a fairly large number of observations. The balance item on which the earnings were downsized was is Total asset, as this quickly allows the comparison of competing companies that are part of the same sector of the market. To ensure the robustness of the findings, other balance results could be placed in the denominator (market value of common

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[44] Due to the presence of some negative and positive extremes, the descriptive statistics shown here do not take into account the upper and lower 1% of the observations for each year.

equity, the previous year's net sales or total assets, but the results obtained would have been similar. The two ratios used will be defined with the names of earnings and changes in earnings.[45]

With reference to the amplitudes of the earnings and change in earnings, we show the results referred to the interval width of 0.01. The reason why it did not choose a narrower range was to compare it better with previous studies since the number of observations is adequate for the analysis, but not sufficient for such a narrow interval. Besides, the graphical representation did not lend itself well to collecting the whole of the observations in each interval, greatly restricting the image of the observed sample. Anyway, to ensure the robustness of the results, it was repeated the analysis at different intervals (Scott, 1979, Silverman, 1986), the results were qualitatively similar, as they are not significantly affected by having chosen an amplitude of earnings and change in earnings intervals rather than another. Subsequently, after the graphic representation, it is required a statistical estimate of the frequency distributions of the earnings and their variations. As mentioned above, the statistical estimation used to verify that the null hypothesis of homogeneous distribution is given by the difference between the current and the expected number of observations in a range, divided by the estimated standard deviation of the difference, as recommended by the authors of the approach used (Burgstahler and Dichev, 1997)[46].

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[45] The indicators described above are defined as follows:
- $E_{it} = N_{it} / TA_{it-1}$
- $EC = (N_t - N_{it-1}) / TA_{it-2}$.

EC_{it} is the earnings change reported by company i in financial year t; NI_{it} is the earnings before extraordinary items reported by company i in financial year t; NI_{it-1} is the earnings before extraordinary items reported by company i in financial year t-1; TA_{it-2} is the Total asset of company i in financial year t-2.

Figure 3.1 Descriptive statistics Earnings and Change in Earnings scaled by Total asset
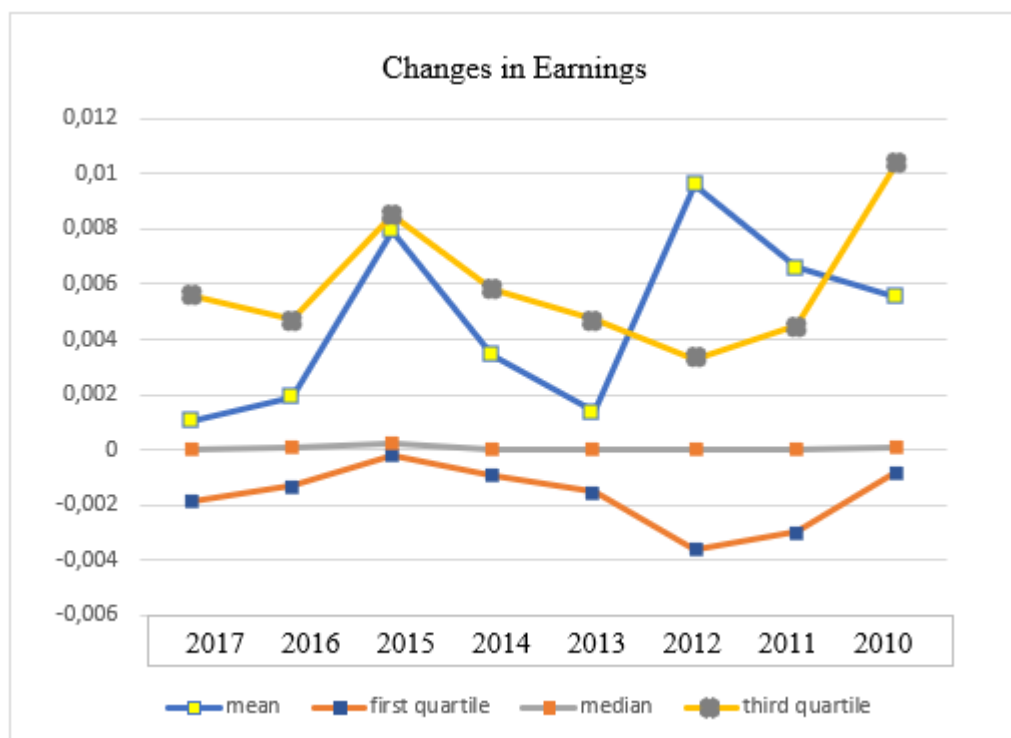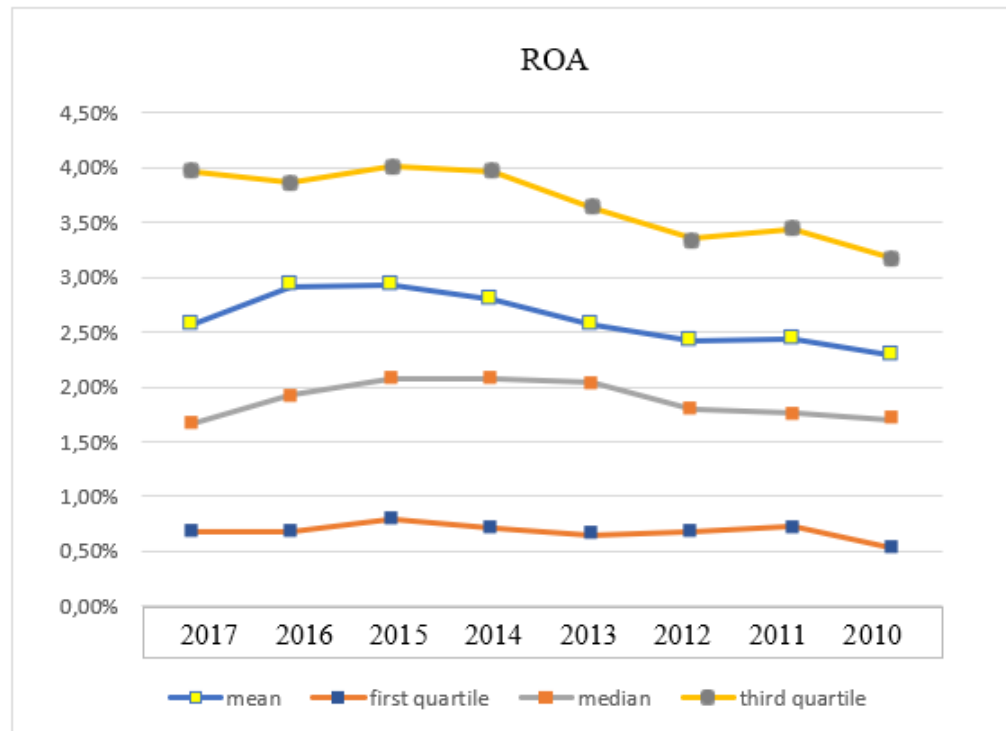
Returning to the previous table 3.4, the total number of observations is 4,072, including all sample companies for the period 2010-2017. For a clearer representation of the trend analyzed, it was decided to expose the data in a graphical way (Figure 3.1). The mean and the median following differing trends during the entire selected period. The mean and the median in both the observed variables (Earnings and changes in Earnings interval) do not present a

particular dynamic. In 2012 in changes in Earnings interval both the standard deviation and the variance report quite high values. These statistics, as well as inspection of the data, reveal that in both variables, we can notice a value of the mean always greater than the value of the median, in all the years considered. This finds a more relevant presence of positive extremes with respect to negative extremes.

It is interesting to note that apart from 2017, there has been an increasing trend from 2010 to 2016, regarding the return of assets (ROA), and in general a reduction in the change in earnings intervals, underlining how the increase in overall profitability could be related to a greater use of earnings management practices, so as to signal the most constant trends and avoiding to report substantial changes in earnings growth

Earnings management to avoid losses

The statistical description offers only a general and not an explanatory representation of the phenomenon analyzed. The construction of the histogram and the division of the earnings distribution frequency scaled by beginning Total asset in amplitude intervals 0.01 and ranging from - 0.10 to + 0.20, allows a more detailed view of the sample, detecting a single peaked in the second interval after the zero thresholds and a relatively smooth distribution in the complexes of the regions considered, except in the area of zero earnings. Earnings in the region to the left of the zero thresholds occur much fewer frequently than expected values resulting from a smoothness of the remainder of the distribution. However, it must be said that earnings before extraordinary items on AIDA database was close to zero for several observations, involving only cooperative companies. In most financial statements, the profit is zero due to the cooperative practice of remunerating the shareholders not through the distribution of profit but by liquidating the contribution, which embraces the valuation generated by the corporate management. In fact, from the profits (remuneration of capital) must be kept separate the reimbursement to shareholders of part of the price paid for the goods or services purchased by the cooperative at market price, eg. the conferment of grapes by the shareholders, which is represented in the item costs of raw materials, is indirectly remunerated through the sale of products on the market.

Therefore, as we can see from the values observed, returns accounting values, which are scarcely representative of operating income and above all "net income", determining profitability index different from those usually found in limited companies.[47]

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[47] The Italian current regulations require that the cooperatives report separately the data related to the activity carried out with the shareholders, distinguishing the different mutualistic managements. This analysis is difficult to perform and laborious in the case where the number of examined companies is high.

To ensure value validity, it has been more closely examined the individual components that lead to the determination of the operating result, showing in many cases a very small operating margin, followed by almost zero net income. However, probably in some cases it was impossible to obtain information. Therefore, in the analysis of the first interval to the right of zero, care must be taken, since a part of the these could be due to errors or lack of data that the database reports. Highlighting another time, this phenomenon is absolutely normal in the world of cooperative societies and should not cause many worries. In fact, almost half of the cooperatives of the selected sample, 88 out of 185, shows a value of ROA lower than 1%. In the ROA case, in all the graphs represented, even if taking into account the second and third area to the right of zero, the number of observations found is always greater even more than the first negative range of the histogram, showing in the cases represented a slight asymmetry that is increasingly accentuated with the increase in the number of years characterized by positive earnings and increases in earnings. Figure 3.2 shows the frequency distribution of wineries companies included in the sample.

Figure 3.2Frequency Distribution of observations in Earnings Intervals (ROA)
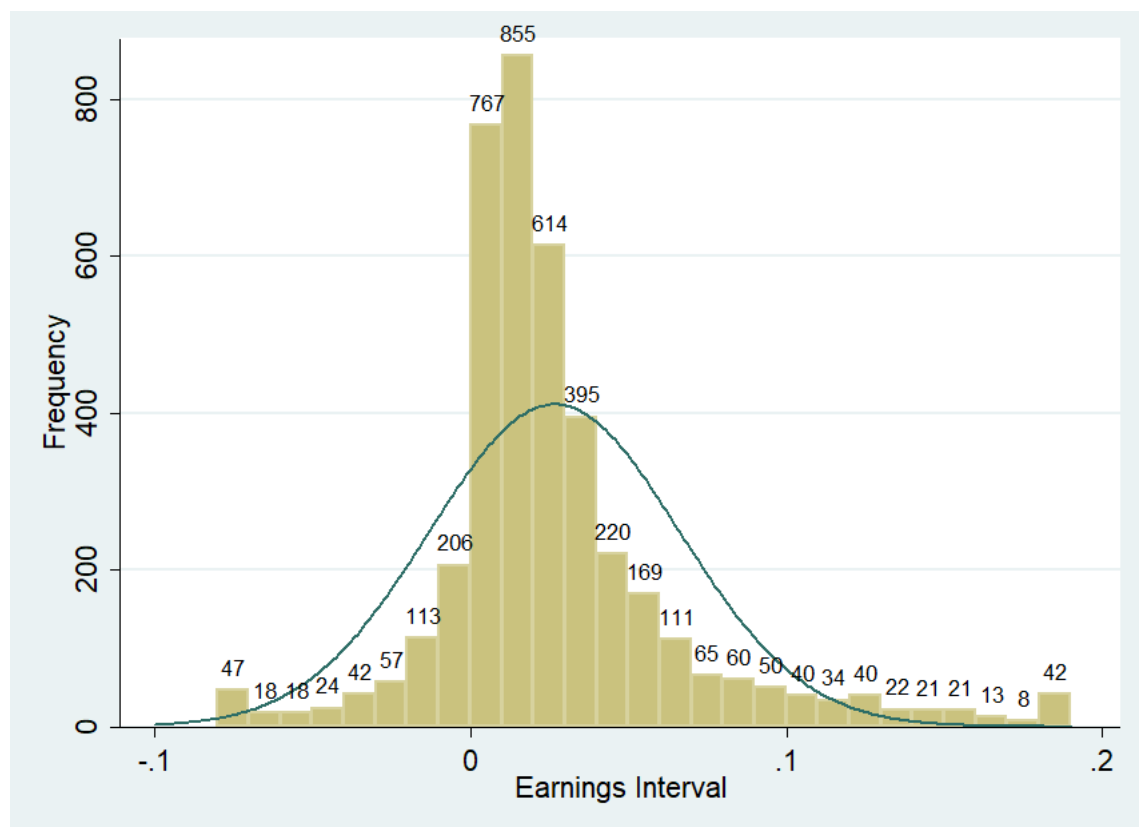
The histogram presents in the axis of the abscissas (x) the amplitude intervals [0; 0.01] of the distribution of profits scaled by the Total asset; while in the axis of the ordinates (y) the frequency, the number of the observations that fall in the interval considered.

As suggested in Burgstahler and Dichev (1997), the frequency distribution is smooth if the expected number of observations which fall in an interval (nei) is the average of the number of observations that fall in the two immediately adjacent intervals (nai-1 and nai+1). However, as can be seen from the graph, the distribution appears asymmetric, presenting an evident concentration of observations to the right of zero, especially in the 3 intervals ranging from 0 to 0.03, which comprise more than half (55%) of the selected sample, leading to an average ROA of 2.6%.

In order to test the null hypothesis of no earnings management, the expected number of observations is equal to the average of the observations in the two close intervals. The frequency of managerial earnings takes into consideration an interval much wider than the two regions adjacent. As mentioned, in order to evaluate the earnings management, the measure of users should have an asymmetrical right-hand shape, measuring a greater frequency of use against zero. The discontinuity and the concentration of distribution near zero is confirmed by the statistical tests. However, this assessment must be related to a second measure that considers changes in earnings intervals. Considering the percentage amplitude of the intervals, the region immediately to the left of zero presents much less observations than the region immediately to the right of zero. This according to the analysis is relatively due to the presence of cooperatives just in the interval [0; 0.01], for the reasons explained above. Because of the limit in the calculation of standardized difference[48], that it measures only earnings management in areas adjacent to zero, it was preferred to use a simple difference between the expected and current number of observations in the distribution. The results, which will be explained later, passing from a number of observations below the average of the normal distribution plot to a higher frequency of observations immediately after zero.

The Burgstahler and Dichev approach predicts that they could be incentives to avoid losses as the positive period of earnings increases. In fact, the analysis concerned, in addition to the sample in general, a smaller size, based on three categories: One year of positive earnings; 2 years of positive earnings; 3 or more years of positive earnings.
Figure 3.3, Figure 3.4 and Figure 3.5 show distributions of earnings for the categories examined. The three figures show suggestive evidence of earnings management to avoid losses, as in the previous case.

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[48] In this study, the standardized distance is the difference between the the actual observations and the expected value of observations in the interval considered divide by an estimate of the standard deviation of the observations in that interval.

Figure 3.3 Frequency distribution of earnings one year of positive earnings
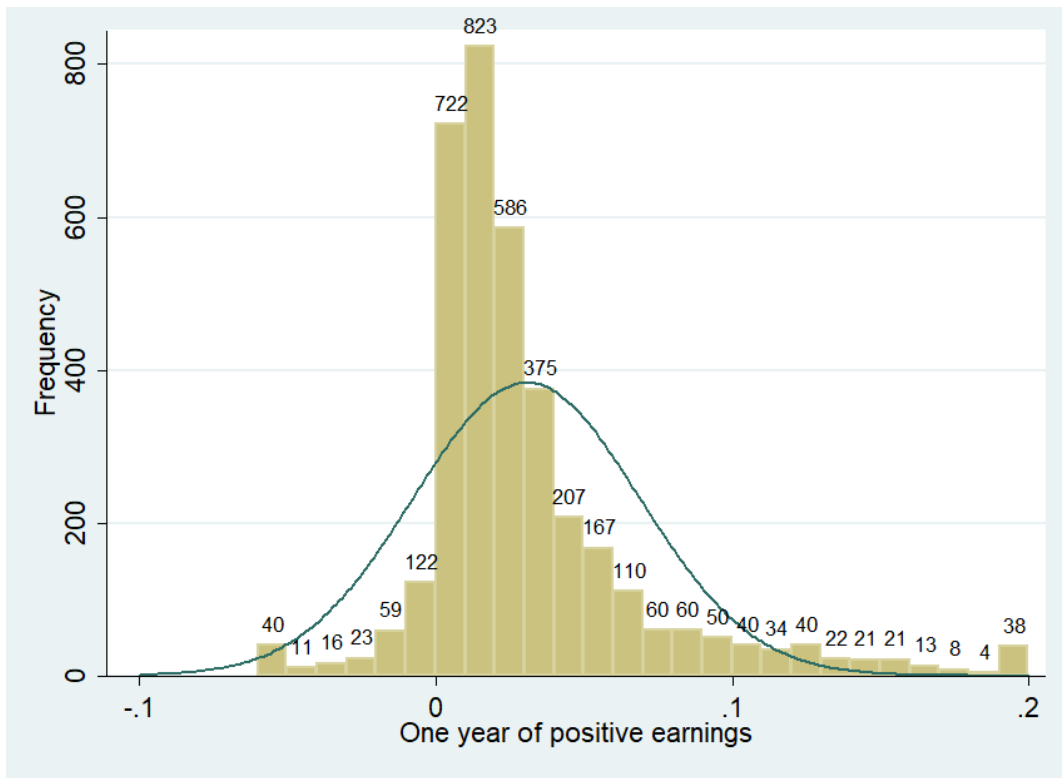
Figure 3.4 Frequency distribution of earnings 2 years of positive earnings

The results obtained are similar to those obtained in previous research that has adopted this approach, which argues that as the duration of the period considered increases from one to more years of positive earnings, the incentive to avoid losses rises. The results obtained, and the arguments just mentioned were aimed at verifying the alleged existence of earnings management. In fact, the null hypothesis provides that the absence of earnings management is given by a leveling of the distribution, ie without any significant change, in terms of observations, between intervals adjacent to zero. Then, in order to estimate the frequency of earnings management, we assume an approximately symmetric distribution of earnings around 0.026, assuming that the right half of the empirical distribution is not affected by earnings management in order to avoid accounting losses. Therefore, to calculate the estimated number of cases in which companies have engaged in the manipulation of earnings, two factors must be taken into account: the expected and current number of observations noted. From their difference, we have the number of cases of earnings management in the interval considered.

Earnings management cases = Expected observations - Actual observations

If the earnings management practices are aimed at avoiding losses, we will have a greater number of observations (higher than expected values) in the interval to the right of the zero value (in the presence of earnings) and a smaller number of cases (lower than the number expected) in the region to the left of zero (in the presence of losses). In accordance with the

model adopted, it will be examined the area with negative earnings. It reports the numerical estimate of the cases of earnings management related to three intervals of increasing amplitude [(-0.01, 0); (-0.02, 0); (-0.03, 0)].

From the assessment of the individual intervals, in relative succession, we have 85, 199 and 309 observations, respectively. These constitute a small percentage of the total number of observations, sequentially representing 2.1%; 4.9% and 7.6% of the 4072 observations available for the calculation of the ROA. However, in terms of negative profits, looking only at the left-hand side of zero earnings, they constitute respectively 16.8; 39.4% and 61.2% of the total observations that report losses during the fiscal period just ended. Therefore, going to calculate the percentages of the earnings management cases in the respective intervals adopting the aforementioned formula and dividing by the expected number of observations in the respective intervals (291,518, 685), we have that the cases of earnings management that adopt a policy of smoothing or otherwise in order to avoid losses in the hardest years, would be respectively 29.2%, 38.4% and 45.1% of the expected number of observations in the absence of earnings management, signaling a significant circumstance in the evaluation of the sample, underlining that the number of cases that have reported earnings management in a singular interval [0; 0.01] went to increase from 85 (1st interval to the left of zero)to 110 (3rd interval to the left of zero) to go away from the zero thresholds, with a progressive increase as the number of observations decreases. In the rest, we will look at how earnings vary from one year to the next in a positive sense, continuing to grow, or in a negative sense, showing a reduction in absolute terms.

The present observations, in the intervals taken into consideration, are lower to the expected observations from a normal symmetric distribution with mean 0 and variance 1. Thus, the evidence suggests that 29% to 45% of the wineries with slightly pre-managed losses exercise discretion to report earnings. From these results, we can only confirm the hypothesis previously taken.

- Hypothesis 1: Italian wineries with small losses manage earnings upward, just above the zero thresholds.

Earnings management to avoid large and negative earnings changes

The five-year period just ended offered excellent news for wineries at the economic level, with the birth of reality and society with a more respectful attitude towards nature. In terms of operating margin, the selected sample has grown disproportionately above all in the last 5 years (+ 52.9%). Although there has been a positive evolution in terms of earnings growth, the sustaining of a positive change in earnings, which is an increase compared to previous

earnings, even if it is ordinary in companies managed in a healthy way, the variability of weather conditions[49] and the continuous and ruthless competition that affects smaller companies (which are unable to export their products because of reduced margins and continuous price reduction), leads negative results or to economic downturn in some cases. Therefore, in the study of data and in the development of graphical and statistical representations we would expect a more or less homogeneous balance between positive or negative values in the changes in earnings between the periods considered.

Starting from the construction of the histogram, we can have an overall view of the set of observations found, grouped in intervals of equal size in order to compare the different regions and to estimate within each individual area the presence of cases of earnings management, as described in the previous paragraph from the difference between the expected and detected observations. The previous analysis concerned the subdivision of the histogram of the observations in bars, which we had as a reference point the zero, to the left of which there were losses and to the right the earnings. In this section, the object of study will concern the variation of the earnings of the Italian wineries. The histogram will show, in the axis of the abscissas (x) the variable changes in Earnings Interval, with amplitude intervals [0; 0:01], ranging from - 0.10 to + 0.15[50] ; while in the axis of the ordinates (y) the frequency, the number of the observations that fall in the interval considered.

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[49] An Italian context in which every year increases the number of catastrophic events (floods, tornadoes, extended periods of drought) that often bring huge damage to the landscape and the local economy.
[50] The histogram does not take into consideration the upper and lower 1% of the observation for each year, avoiding the representation of outliers so as to allow more detailed view of the sample.

Figure 3.6 Frequency Distribution of observations in changes Earnings Intervals
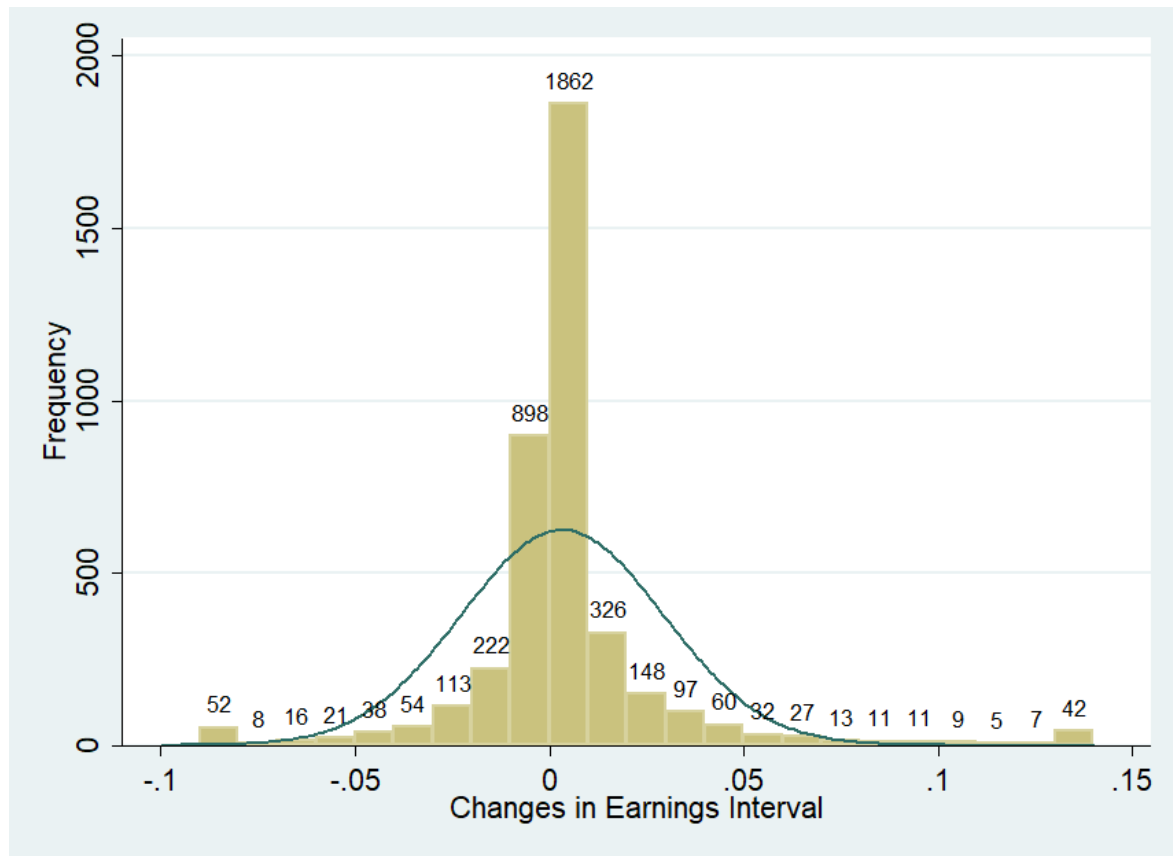
In the distribution shown Figure 3.6 in the we can see two peaks in conjunction with zero with a noticeable concentration of observations around zero (most of the cases are in the intervals adjacent to zero), showing in the cases represented a slight asymmetry (approximately symmetric distribution of earnings around 0.005) that is progressively accentuated with the increase in the number of years characterized by increases in earnings.

We have to test the hypotheses that firms avoid large and negative earnings changes at the end of the fiscal period. As mentioned, in order to evaluate the earnings management, the measure of users should have an asymmetrical right-hand shape, measuring a greater frequency of use against zero. The discontinuity and the concentration of distribution near zero are confirmed by the statistical tests. The evaluation of changes in earnings intervals will allow us to have a more complete picture of the research topic of our "earnings management" analysis.

Considering the percentage amplitude of the intervals, Italian wineries frequency distribution of earnings changes shows two discontinuities: the first one between the first and the second interval to the left of zero and the second one in the same way to the right of zero. This indicates that the expected observations in the intervals [-0.02; -0.01] and [0.01; 0.02] will be lower than expected results from a symmetric distribution.

The two peaks have values that are significantly higher than the average of the normal distribution plot. The incentive to avoid large and negative earnings changes increase with the increase of the period considered. In fact, deepening the search for periods with increases in earnings, the research is divided into three categories: Observations with one year of Earnings increase; Observations with 2 years of Earnings increases; Observations with 3 or More Years of Earnings increases.

Figure 3.7, Figure 3.8 and Figure 3.9 show distributions of earnings for the categories examined. The three figures show a certain similarity between the intervals adjacent to the zero which is decreasing with the increase in the period of earnings increases.

Figure 3.7 Frequency Distribution of observations of one year of Earnings Increases
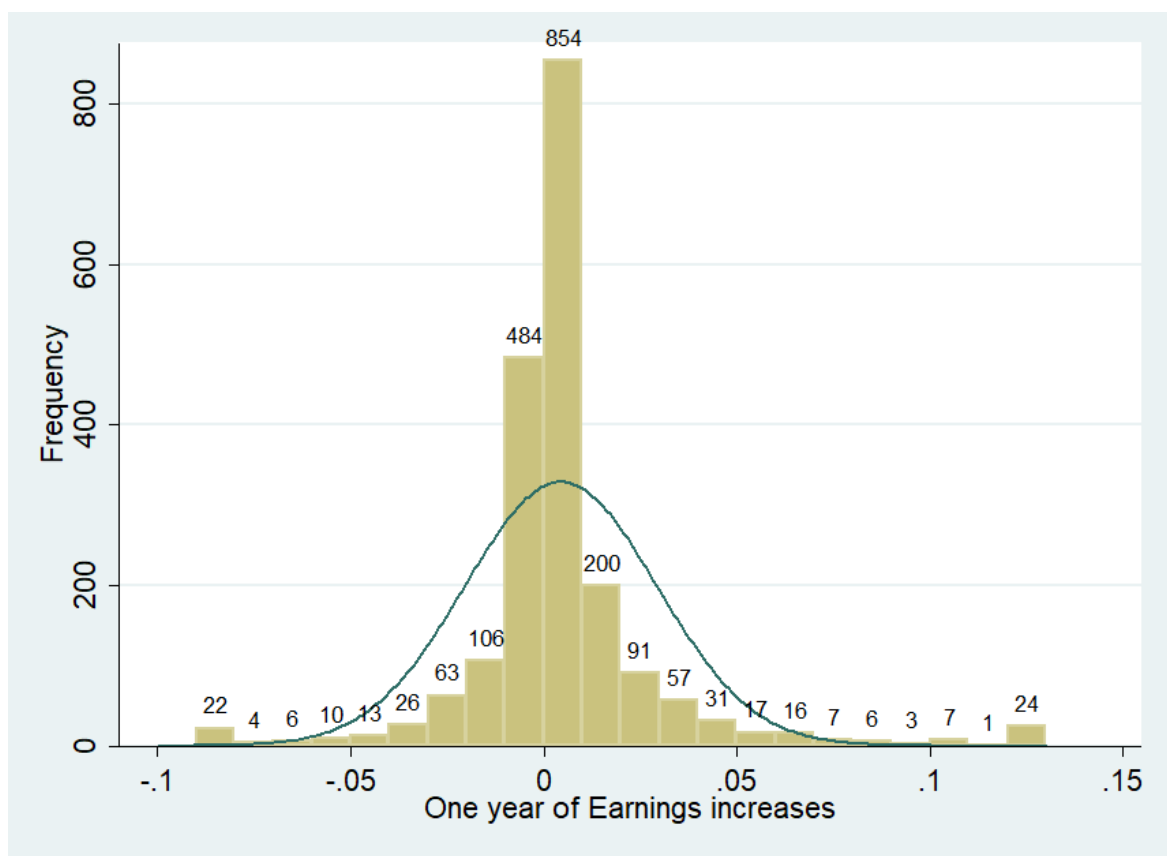
Figure 3.8 Frequency Distribution of observations 2 years of Earnings Increases
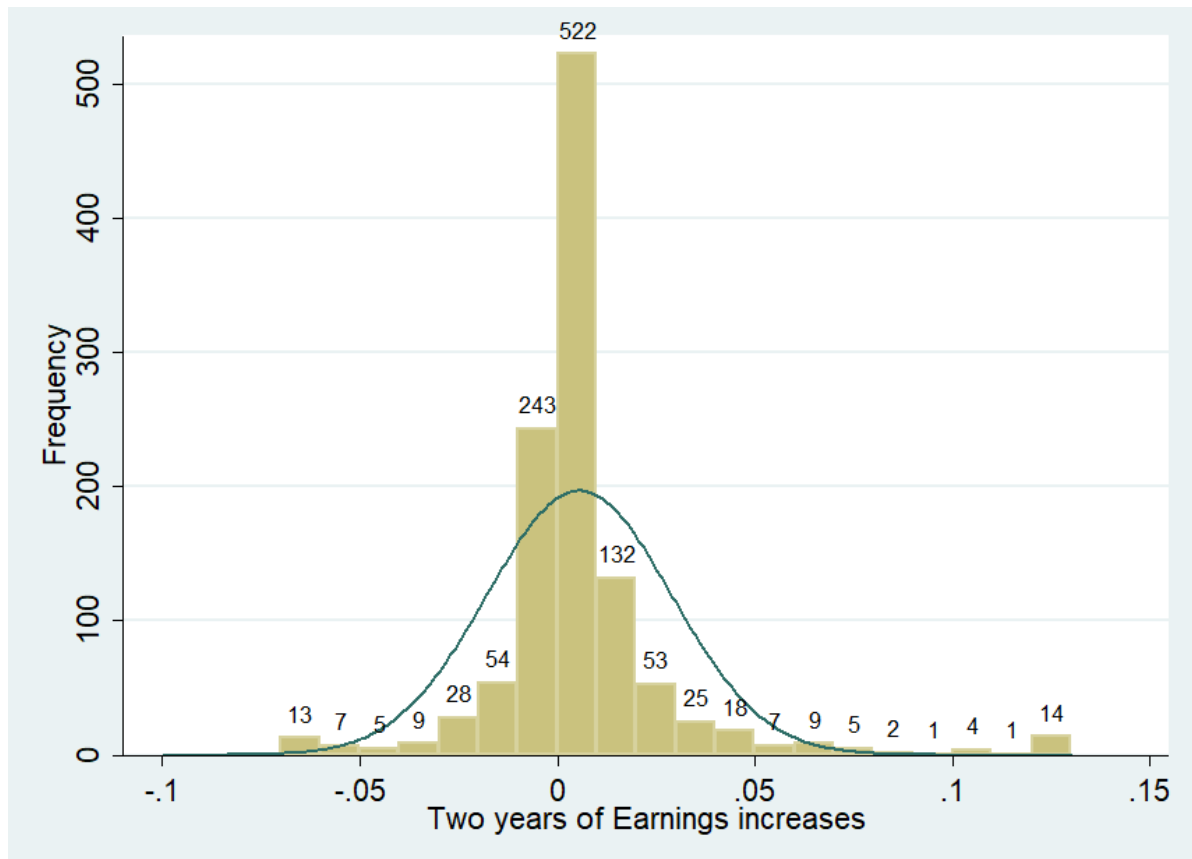
Figure 3.9 Frequency Distribution of observations 3 or more years of Earnings Increases
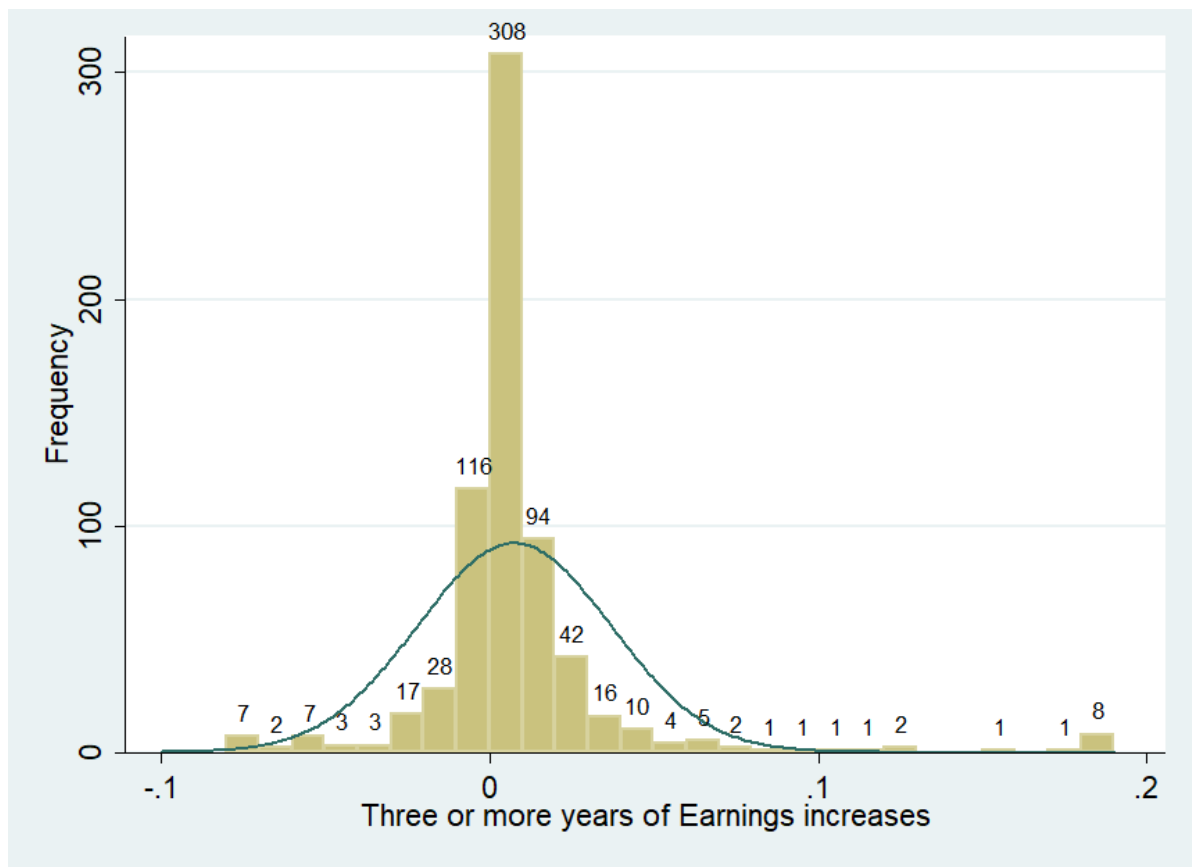
An interesting phenomenon to examine because, according to a theoretical approach, the distribution had to show a profound irregularity in the transition from decreases to increases earnings, there is indicative evidence of earnings management.

The results obtained are similar to those obtained in previous researches that have adopted this approach, which argue that the practice of earnings management to avoid earnings decreases among private companies that comprise the whole of our sample is of little importance[51]; while, of the different results, other studies have been found in the general analysis of the listed companies, a certain incentive to pursue a path of continuous growth in the valorization of the share price, with consequent increase in the wellbeing and prestige that is attributed to the manager.

The results obtained, and the arguments just mentioned were aimed at verifying the alleged existence of earnings management. In fact, the null hypothesis provides that the absence of earnings management is given by a leveling of the distribution, ie without any significant change, in terms of observations, between intervals adjacent to zero. In this case, there is not significative evidence that the null hypothesis of smoothness does not hold to zero.

As in the previous case, in order to estimate the frequency of earnings management, we assume an approximately symmetric distribution of earnings around 0.005, assuming that the right half of the empirical distribution is not affected by earnings management in order to avoid earnings decreases. Therefore, to calculate the estimated number of cases in which companies have engaged in the manipulation of earnings, two factors must be taken into account: the expected and current number of observations noted. From their difference, we have the number of cases of earnings management in the interval considered. It will be examined the area with a negative change in earnings. It reports the numerical estimate of the cases of earnings management related to the intervals of amplitude [(-0.01, 0); (-0.02, -0.01); (-0.03, -0.02)].

From the assessment of the individual intervals, in relative succession, it has that in the second and third interval to the left of zero have been detected 264 and 220 observations, respectively. These constitute a small percentage of the total number of observations, sequentially representing 6.5%; and 5.4% of the 4072 observations available for the calculation of the Earnings changes. However, in terms of negative earnings changes, looking only at the left-hand side of zero earnings changes, they constitute respectively 18.6%; and 15.5% of the total observations (1422) that report negative earnings changes during the fiscal period just ended. Therefore, going to calculate the percentages of the earnings management cases in the respective intervals adopting the aforementioned formula and dividing by the expected number

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[51] Poli, Simone (2013), *Small-sized companies' earnings management: evidence from Italy*, pp. 93-109.

of observations in the respective intervals (486 and 333), we have that the cases of earnings management that adopt a policy of smoothing, would be respectively 54.3% and 66.1% of the expected number of observations in the absence of earnings management, signaling a significant circumstance in the evaluation of the sample, underlining that the percentage number of cases that have reported earnings management in a singular interval increase from the second to third interval to the left of zero.

The present observations, in the intervals taken into consideration, are lower to the expected observations from a normal symmetric distribution with mean 0 and variance 1. Thus, the evidence suggests that 54% to 66% of the wineries with greater negative earnings changes exercise discretion to report earnings. From these results, we can only confirm the hypothesis previously taken.

Thus, the hypothesis theorized initially:

- *Hypothesis 2: Italian wineries manage earnings to avoid large and negative earnings changes.*

It can be accepted, as it presents substantial evidence.

3.3 Modified Jones model

In the first part of the analysis, we analyzed how earnings and changes in earnings were distributed in the various percentage ranges. Most of the observations were in the areas to the right of zero, with positive earnings and an asymmetrical right-hand distribution, leading to an average ROA value of 4-5%, with a noticeable detachment immediately after the zero thresholds. This could be a sign of earnings management, as many companies have a smoothing policy to level the progress of earnings, avoiding to report small losses and instead of registering just positive earnings. In the second hypothesis, the presented result should show a growth of the observations in the just right part of the zero, with increasing periods of earnings increases. In reality, the variation is not so significant as to reject the null hypothesis of smoothness, since in the areas adjacent to zero the observations are distributed almost homogeneously. So, it has been analyzed what could affect the earnings component, evaluating discretionary accruals that are consistent with income smoothing. We know that revenues are divided into cash flows and accruals for the year. The distinction lies in the fact that the former are non-modifiable components, while the others are subdivided into Non-discretionary accruals and discretionary accruals. Non-discretionary accruals are adjustments necessary to the specifics of the sector and the company (eg Fast-growing companies enjoy more credits than cash sales, while companies with a high percentage of fixed assets will have to pay higher amortization costs). Instead, the

discretionary component is subject to manipulation by the manager, and thus, is considered as a proxy for earnings management.

To further deepen the results, going to select a model that is considered and tested as the most effective and powerful in detecting earnings management, defining it as the model with the lowest incidence of Type II errors, the so-called "Modified Jones Model" in order to understand and reveal earnings management.[52] Empirical studies have stressed that in the analysis of discretionary accruals, the model could suffer from the omission of variables. To improve the robustness and reliability of earnings management results, it is going to consider whether there are any omitted variables. Therefore, the Modified Jones Model is proposed to remove misspecification problems in the Jones model arises due to the omission of a separate variable to reflect managers exercising their discretion over revenues recognition (sales incomes are entered before they accrue, there will be an increase in trade receivables and in accruals as a result of this increase). Therefore, the adjustment to the Jones Model is the inclusion of the change in receivables in the event year. [53]

3.4 The linear regression models

The construction of the linear regression model predicts that there are a dependent variable and one or more independent variables. Data were processed via STATA, for a sample of 4573 observations and an estimated 9-year period (2009-2017).[54]

The dependent variable will be the "Total accruals" (TAC) calculated as the difference between the income before extraordinary items (NI) and the cash flow from operating activities (CFO), defined as:

TACi, t = NIi, t - CFOi, t.

In the absence of residuals (DAC), the model would represent what it calls "Non-discretionary accruals", (NDAC) are presented by:

NDACi, t / TAit-1 = a1 (1 / TAit-1) + a2 ($\triangle$ REVit - $\triangle$ RECit / TAit-1) + a3 (PPEit / TAit-1). [55]

In this case, the total accruals correspond to the Non-discretionary accruals. Thus, the assumption of no earnings management would certainly be accepted. Generally, the model will present the Random error "ε", which represents the discretionary accruals. The residual term is calculated as:

DACi,t = εt = TACi,t – NDACi,t

In the regression model that it will be built, the value representing the discretionary accruals will be the residuals of the Total accruals' regression. The (residual) error term that represents the distance between reality and model, in this specific case is the difference between total accruals (TAC = NDAC + DAC) and normal or Non-discretionary accruals (NDAC). It will take into account the absolute value of residuals as an indicator of earnings management. The higher the residual value, the lower the quality of the earnings.

This study detects earnings management practice on an aggregate basis across Italian wineries from 2009 to 2017.

In addition to the explanatory variables, in the regression model, there will be a constant that has the function of controlling additional heteroscedasticity. It estimates the model with the coefficient estimate and the inclusion of the constant.

Figure 3.10 Multiple linear regression of the Modified Jones Model[56]

Source	SS	df	MS
Model	9696.37608	3	3232.12536
Residual	3401.00833	4569	.744366017
Total	13097.3844	4572	2.86469475

Number of obs = 4573
F(3, 4569) = 4342.12
Prob > F   = 0.0000
R-squared   = 0.7403
Adj R-squared = 0.7402
Root MSE   = .86277

TAC	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
a1	-101.054	3.613819	-27.96	0.000	-108.1388	-93.96917
a2	-.9859858	.0105519	-93.44	0.000	-1.006673	-.9652989
a3	-.1041806	.0551199	-1.89	0.059	-.2122422	.003881
_cons	.0535186	.0176683	3.03	0.002	.0188803	.0881569

Source – The categories that will be analyzed are the model (Non-discretionary accruals), residuals (discretionary accruals) and the total (Total Accruals). Residuals are what is not explained by independent variables

TAC- total accruals - represents the dependent variable, that it has the three independent variables (a1, a2, a3 and _cons).

Coef. - The values of the regression equation to estimate the dependent variable from the independent variable.

a1 - The coefficient is -101.054. For each unit increase in a1, there will be a decrement of -101.054 for the aforementioned variable. This means that, as the ratio between 1 and the total assets of the previous year increases, the total accruals variable is reduced more. Therefore, as the size of the company decreases, with the consequent decrease in total assets and the increase in the value of the first explanatory variable (a1), the difference between net income and operating cash flows is reduced. Thus, the change in liquidity, an effect of the management company, is increasingly represented by profit.

a2- The coefficient is -.9859858. At each unit increase in a2, there will be an expected decrease of -9859858 from the TAC variable. An increase in the difference between the change in revenues and receivables leads to a decrease in accruals.

a3- The coefficient for a3 is -.1041806. At each unit increase in a3, there will be an expected decrease of -.1041806 from the TAC variable. The variable "a3" is represented by PPE (Property, Plant and Equipment) divided by lagged assets.

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[56] Among the two models that are used initially to estimate earnings management for the sample (the jones Model and Modified Jones model), the best model was the Modified Jones Model gives the greatest fitness, with the most statistically significant.
The R squared value for the Modified Jones model is 74% compared to 15% for the jones model.

The negative relationship between the two variables is actually reasonable, as referring to the formula:

- **Total accruals**= (ΔCurrent assets - ΔCurrent liabilities − Δ Cash + Δ short term debt - Depreciation).

An increase in fixed assets, would lead to an increase in the depreciation rate and amount with a consequent reduction in total accruals.

The last variable (**_cons**) represents the intercept.

P> | t | - Using an alpha of 0.05, the 2-tailed p-values used in testing the null hypothesis that the coefficient (parameter) is 0. P values of (Prob. 0.000, 0.000, 0.059 and 0.002) were obtained, these data are appropriate.

The coefficient for **a1** (-101.1) is significantly different from 0 because its p-value is 0.000, which is smaller than 0.05. The coefficient for **a2** (-.9859858) is statistically significant because its p-value of 0.000 is less than .05.

The coefficient for **a3** (-.1041806) is not sufficiently contrary to the null hypothesis which therefore cannot be rejected at the 0.05 level since the p-value is greater than .05.

The constant (**_cons**) is slightly different from 0.

[95% Conf. Interval]. [95% Conf. Interval]. The confidence interval is 95%, with alpha equal to 0.05, the p-value (0.059) being greater than alpha, lead to have a confidence interval that includes the value zero and the coefficient of this variable is not sufficiently contrary to the null hypothesis that therefore cannot be refused, is therefore not statically meaningful.[57]

From the analysis of the modified Jones model, the most interesting aspect to analyze is obviously that which cannot be explained by the model itself, that is the residuals (Discretionary accruals). In another way, they form the basis for identifying the phenomenon that is the object of our analysis "earnings management".

From the analyzed sample, it has been distinguished the discretionary accruals on the basis of the estimated periods and the size of the wineries. It will be made then a distinction between discretionary accruals and their absolute value, reporting for each period and dimensional class, the average and the median. (table 5).

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[57] Introduction to SAS. UCLA: Statistical Consulting Group.
from https://stats.idre.ucla.edu/sas/modules/sas-learning-moduleintroduction-to-the-features-of-sas/
(accessed November 06, 2018).

Table 3.5 Discretionary accruals of the Italian wineries according to Modified Jones Model[58]

Panel A (Mean values)

Year observation and winery's size	Discretionary accruals			Absolute value of Discretionary accruals		
	big	medium	small	big	medium	small
2017	-0.0163	-0.0127	-0.0188	0.0807	0.0906	0.0910
2016	-0.0138	0.0045	-0.0387	0.1165	0.1021	0.1182
2015	0.0074	0.0103	-0.0242	0.1026	0.0911	0.1088
2014	-0.0905	-0.0072	-0.0316	0.1102	0.1049	0.1189
2013	0.0446	0.0557	0.0344	0.1192	0.1344	0.1632
2012	0.0474	0.0716	0.0363	0.1328	0.1657	0.1931
2011	0.0317	-0.0108	-0.0063	0.1141	0.1484	0.1702
2010	0.0221	-0.0137	0.0416	0.0934	0.1060	0.2047
2009	0.0302	0.0157	0.0109	0.2361	0.1582	0.2727
Sample mean	**0.0043**	**0.0129**	**0.0014**	**0.1163**	**0.1203**	**0.1630**

Panel B (Median values)

Year observation and winery's size	Discretionary accruals			Absolute value of Discretionary accruals		
	big	medium	small	big	medium	small
2017	0.0118	-0.0091	-0.0268	0.0551	0.0534	0.0628
2016	-0.0096	-0.0154	-0.0358	0.0687	0.0646	0.0745
2015	0.0263	-0.0038	-0.0203	0.0761	0.0735	0.0665
2014	-0.0859	-0.0075	-0.0332	0.0873	0.0743	0.0747
2013	0.0283	0.0306	0.0006	0.0607	0.0822	0.0767
2012	0.0430	0.0213	-0.0326	0.0831	0.1162	0.0928
2011	-0.0150	0.0051	-0.0279	0.0728	0.1029	0.0820
2010	0.0084	-0.0160	-0.0290	0.0622	0.0681	0.0854
2009	-0.0245	-0.0158	-0.0596	0.1525	0.0786	0.1228
Sample median	**0.0074**	**-0.0041**	**-0.0287**	**0.0761**	**0.0743**	**0.0808**

From this table we can deduce a modest propensity to manage earnings in positive the years 2009, 2012 and 2013; in negative, in 2014 and 2017. However, going to look at the median of the observations, for example in 2009 in both dimensional classes, the value is negative. This

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[58] The size of companies has already been explained at the beginning of the chapter. However, here it was proposed again the division of the sample in 3 sizes: big, medium and small, based on the turnover of the last year. Big winery> €50 million; €50 mln> medium winery> €10 mln; Small winery <€10 mln.

is a consequence of a greater number of observations of small negative earnings management and correspondingly a smaller number of cases of large positive earnings management, implying that the presence of highly positive discretionary accruals goes to influence the mean value of the period. For this reason, an analysis of accruals in absolute value was used, in order to identify in which periods there was actually a greater recourse to a possible management of earnings.

Going to observe the values for the individual periods, we can see almost an increasing starting from the most recent to the older ones, with a strong change from 2009 to 2010. This could suggest that it was a probable effect of the financial crisis that led to a manipulation of earnings above all upwards, in order to level the profit trend. Observing the difference between relative and absolute values in 2009, we note that in the first case we have values very close to the sample mean, while in absolute discretionary accruals the latter deviate significantly, a signal of a greater adoption of earnings smoothing policies (Table 3.5).

This assumes that the effect of overcoming any losses was offset by the incentive of the managers charge more costs in the year following the crisis, justifying their choice as a result of the general recession period (big bath technique).

3.5 The independent and control variables

Most of the research on the issue of earnings management focused on a larger dimension of the phenomenon, analyzing the part of a company that has a market quotation and is possibly subject to the manipulation of profits to maintain and stabilize the short-term equity performance. Moreover, an important presence of study regards the analysis of events such as: IPOs (initial public offerings) and SEOs (Seasonal equity offerings), where equity issuers have an incentive to boost their earnings before a public offering has always been high, companies prefer to issue shares at the highest possible price and increase offering proceeds. Another current takes into account the distribution of earnings in a limited range (-10 and + 10%), spreading it in many small regions of percentage amplitude and as a reference point the zero earnings thresholds.

The Italian wineries lend themselves to this phenomenon, as the conspicuous presence of cooperatives provides a strong incentive to respect the zero earnings benchmark, since the cooperative members are remunerated through the conferment of raw materials, and it is their interest to maximize remuneration and at the same time minimize tax burdens.

Acting in another perspective, cooperatives are a bit of a limitation to our analysis, although recent studies show that agricultural cooperatives manage their results in order to avoid reporting decreases in profits and small losses, but above all they avoid in a clear way to report

small losses. This practice is more marked in large companies, favored by the possibility of enjoying higher remunerations and by the most indebted companies due to a wider information asymmetry that characterizes the latter.[59]

A clear distinction will be possible, distinguishing the analysis between cooperatives and corporations. Our discussion will not have as its focus the identification of the main reasons that have the Italian wineries to adopt such behavior, as we can only assume the real reasons, but the goal is to get a general description of this phenomenon on the basis of the Italian winery industry, firm characteristics and their impact to a greater or lower propensity to manage earnings. Previous sources have shown a greater frequency and correlation between earnings management phenomenon and companies that were highly indebted, with low growth margins, smaller and less profitable compared to the others belonging to the same industry.

To isolate the effect of the earnings management variable, it is important to include several control variables in the regression model to increase the goodness of fit. The aim is to identify and isolate the most explanatory and significant variables of the variable we are looking for (Discretionary accruals). The control variables used in this study will be six: Size, Growth, ROA, CFO, CIR, Leverage.[60]

The first variable introduced concerns the size of the sample companies, computed as the natural logarithm of total assets. A negative relationship will be assumed with the dependent variable, as seen in the previous results (Table 5). In addition, large companies try to avoid earnings management, given the presence of a more pressing control on them by the authorities, investors and other stakeholders. The size and the greater stability in the management of their activities allows having available an amount of greater resources to be used to cover any risks deriving from seasonal trends, requiring a lesser need in the implementation of earnings management practices.

The second dimension considered, concerns the growth of companies (equal to the variation in sales revenues divided by sales revenues of the previous year). The growth trend could be influenced by periods of uncertainty that would cause negative repercussions distorting the growing path, as this volatility of earnings is perceived as a factor of greater corporate risk, with the consequent increase in the cost of capital invested, further penalizing the growing companies affected by a variability and lower stability of operations in the face of an external environment characterized by a high level of uncertainty. This could provide managers with an

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[59] Pedro Piccolia1, Vilmar R. Moreirab , June Cruzc, February 2017 . *"Do cooperatives manage earnings to avoid losses and earnings decreases?"*.
[60] The choice of these control variables can be brought to prior studies and empirical restrictions.

opportunity, but also a need (efficient earnings management) in earnings smoothing, incentivized by a more difficult activity in detecting earnings management in growing firms than mature firms.

The performance of a company can be a positively influenced variable, because variability and poor profitability could provide a valuable support in the implementation of earnings management practices. Therefore, from our analysis we will expect a positive relationship between our ROA control variable (return on assets) and the discretionary accruals. Previous research has shown that it is an inverse relationship between operating cash flows and the degree of earnings management. When operational performance is low, managers tend to increase reported earnings and vice versa. If the operating performance is drastically negative, it becomes necessary to adopt the "taking bath" strategy, as it becomes too costly to bring profits back to positive levels. In the regression, operating cash flows will be scaled by lagged total assets (CFO / At-1).

Another consideration must be made with regard to the lower or higher presence of fixed assets, in a more specific way the percentage of property, plant and equipment on the total assets, ie the Capital Intensity Ratio (CIR). As we know from the formula of total accruals[61], CIR represents a measure whose coefficient should report negative values, as depreciation is a cost item that reduces accruals. Therefore, a lower amount of fixed assets is associated with a broader maneuver for discretionary exercise in the management of earnings by managers.

Last but not least, the leverage ratio (total debt / total assets). This is a highly controversial variable, since a high leverage has a positive relationship with the manipulation of profits as the companies in order to avoid breakdowns in the debt covenant agreement or any renegotiations that lead to a higher interest rate on the debt, they end up increasing earnings with the benefit of reassuring creditors. Sweeney (1994), reports a positive relation between the upwards earnings management and firms that are on the verge of violating debt covenant.

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[61] Total accruals= (ΔCurrent assets- ΔCurrent liabilities – Δ Cash + Δ short term debt - Depreciation).

Table 3.6 Winery characteristics by magnitude of Earnings Management Abs DAC

Portfolio ranking	N	Abs DAC	Size	Growth	ROA	CFO	CIR	Leverage
1 (low)	452	0.007	8.862	0.056	0.028	-0.032	0.236	0.627
2	452	0.022	8.912	0.124	0.025	-0.008	0.213	0.631
3	453	0.036	8.829	0.119	0.023	-0.025	0.229	0.616
4	452	0.052	8.786	0.127	0.026	-0.024	0.209	0.629
5	452	0.069	8.794	0.111	0.027	-0.020	0.217	0.614
6	452	0.089	8.766	0.095	0.029	-0.016	0.219	0.608
7	452	0.115	8.877	0.059	0.025	-0.029	0.205	0.637
8	453	0.155	8.837	0.106	0.026	-0.022	0.202	0.650
9	452	0.229	8.727	0.125	0.024	-0.023	0.184	0.627
10 (high)	452	0.478	8.825	0.131	0.026	-0.021	0.189	0.651

Table 3.6 presents Abs DAC portfolios, with different numbers depending on the average intensity, expressed in deciles, of aggregate earnings management. The first decile obviously presents a lower mean of discretionary accruals (0.007); while the last decile has the highest mean (0.155). From a first observation of the table we do not notice the significant relationships between the control variables and the dependent variable. So, it has proceeded to the construction of regression models.

Figure 3.11 Multiple regression model, absolute discretionary accruals of sample wineries

```
      Source |       SS       df       MS              Number of obs =    4522
-------------+------------------------------           F(  6,  4515) =    1.63
       Model |  1.4525878       6  .242097966           Prob > F      =  0.1354
    Residual |  671.973292    4515  .148831294           R-squared     =  0.0022
-------------+------------------------------           Adj R-squared =  0.0008
       Total |  673.42588     4521  .148955072           Root MSE      =  .38579

------------------------------------------------------------------------------
      AbsDAC |     Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        Size |  -.0032445   .0054279    -0.60   0.550    -.0138857    .0073968
      Growth |   .0042091   .0088383     0.48   0.634    -.0131183    .0215365
         ROA |  -.1515247   .1205908    -1.26   0.209    -.3879417    .0848923
         CFO |    .084415   .0503595     1.68   0.094    -.0143143    .1831443
         CIR |    -.05387   .0269463    -2.00   0.046     -.106698   -.0010421
    Leverage |  -.0153702   .0246352    -0.62   0.533    -.0636673    .0329268
       _cons |   .2042883   .0494091     4.13   0.000     .1074222    .3011544
------------------------------------------------------------------------------
```

Significant to * 90%, ** 95%, *** 99%

It has been analyzed the multiple linear regression model, without presenting any significant relationships, except for operating cash flows (P> | t | 0.094*) and the capital

intensity ratio (P> | t | 0.046**), Figure 3.11, then, it has been examined the simple linear regression model for every single variable Figure 3.12.

Figure 3.12 Panels of Linear regression models, Abs DAC of sample wineries

Panel A

Source	SS	df	MS		Number of obs =	4522
					F(1, 4520) =	1.48
Model	.220312917	1	.220312917		Prob > F =	0.2240
Residual	673.205567	4520	.148939285		R-squared =	0.0003
					Adj R-squared =	0.0001
Total	673.42588	4521	.148955072		Root MSE =	.38593

AbsDAC	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Size	-.0062899	.0051716	-1.22	0.224	-.0164289	.003849
_cons	.2048504	.0459755	4.46	0.000	.114716	.2949849

Panel B

Source	SS	df	MS		Number of obs =	4522
					F(1, 4520) =	0.08
Model	.01190987	1	.01190987		Prob > F =	0.7774
Residual	673.41397	4520	.148985392		R-squared =	0.0000
					Adj R-squared =	-0.0002
Total	673.42588	4521	.148955072		Root MSE =	.38599

AbsDAC	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Growth	.0024755	.0087554	0.28	0.777	-.0146894	.0196404
_cons	.1491109	.0058132	25.65	0.000	.1377142	.1605076

Panel C

Source	SS	df	MS		Number of obs =	4522
					F(1, 4520) =	1.36
Model	.202639561	1	.202639561		Prob > F =	0.2435
Residual	673.22324	4520	.148943195		R-squared =	0.0003
					Adj R-squared =	0.0001
Total	673.42588	4521	.148955072		Root MSE =	.38593

AbsDAC	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
ROA	-.1361597	.1167339	-1.17	0.244	-.3650152	.0926957
_cons	.1528957	.0064861	23.57	0.000	.1401799	.1656116

Panel D

Source	SS	df	MS		Number of obs =	4522
					F(1, 4520) =	2.75
Model	.409994909	1	.409994909		Prob > F =	0.0971
Residual	673.015885	4520	.14889732		R-squared =	0.0006
					Adj R-squared =	0.0004
Total	673.42588	4521	.148955072		Root MSE =	.38587

AbsDAC	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
CFO	.0835539	.0503525	1.66	0.097	-.0151616	.1822695
_cons	.1511707	.0058398	25.89	0.000	.1397218	.1626196

Panel E

Source	SS	df	MS		Number of obs =	4522
					F(1, 4520) =	4.16
Model	.618649864	1	.618649864		Prob > F =	0.0415
Residual	672.80723	4520	.148851157		R-squared =	0.0009
					Adj R-squared =	0.0007
Total	673.42588	4521	.148955072		Root MSE =	.38581

AbsDAC	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
CIR	-.0534801	.0262329	-2.04	0.042	-.1049094	-.0020508
_cons	.1606326	.0079644	20.17	0.000	.1450185	.1762466

Panel F

Source	SS	df	MS		Number of obs =	4522
					F(1, 4520) =	0.36
Model	.053690986	1	.053690986		Prob > F =	0.5483
Residual	673.372189	4520	.148976148		R-squared =	0.0001
					Adj R-squared =	-0.0001
Total	673.42588	4521	.148955072		Root MSE =	.38597

AbsDAC	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Leverage	-.0147873	.0246318	-0.60	0.548	-.0630778	.0335031
_cons	.1586624	.016507	9.61	0.000	.1263006	.1910242

We can see that there is no significant relationship between the dependent variable and the explanatory variables, except in the single relationship with the CIR control variable (Capital Intensity Ratio) and a modest but significant correlation at 90% with the CFO (0.097** p> 0.05). By analyzing the variable CIR, this factor is statistically lower for the high abs_DAC portfolio and statistically higher for the low abs DAC with a p-value equal to 0.042*. As we could suppose, the coefficient (-0.053) of the variable takes on a negative value, having established that between the accruals and the ratio there is a negative relationship, as the amortization reduces the total accruals. In fact, we can observe a correct association between the magnitude of earnings management and the CIR, as the explanatory variable with the increase of the discretionary accruals, tends to decrease gradually, following a somewhat regular pattern across the portfolios, confirming what it has just been described above of the negative relationship between discretionary accruals and CIR.

Table 3.7 Winery characteristics by magnitude of Earnings Management positive DAC

Portfolio ranking	N	DAC +	Size	Growth	ROA	CFO	CIR	Leverage
1 (low)	194	0.006	8.757	0.038	0.030	-0.029	0.242	0.610
2	194	0.019	8.888	0.166	0.025	-0.006	0.234	0.604
3	193	0.032	8.935	0.180	0.024	-0.028	0.233	0.618
4	194	0.048	8.884	0.068	0.027	-0.026	0.220	0.630
5	194	0.066	8.764	0.127	0.028	-0.022	0.191	0.603
6	194	0.087	8.943	0.116	0.032	-0.021	0.198	0.599
7	194	0.116	8.941	0.090	0.026	-0.032	0.214	0.621
8	193	0.164	8.985	0.127	0.030	-0.009	0.195	0.643
9	194	0.257	8.762	0.179	0.027	-0.022	0.179	0.613
10 (high)	194	0.895	8.761	0.151	0.023	-0.012	0.214	0.630

It is going to examine whether wineries characteristics affect the direction of earnings management.

Table 3.7 presents the mean of the same firm characteristics presented above (size, growth... and leverage) of decile portfolios of positive discretionary accruals. In Figure 3.13 no significant relationship was found between the explanatory variables and the discretionary accruals, having as alpha observed a greater value than p = 0.05 (DAC +).

Figure 3.13 Multiple regression model, positive discretionary accruals of sample wineries[62]

Source	SS	df	MS		Number of obs =	1938
					F(6, 1931) =	1.01
Model	1.81485823	6	.302476371		Prob > F =	0.4189
Residual	580.045938	1931	.300386296		R-squared =	0.0031
					Adj R-squared =	0.0000
Total	581.860796	1937	.30039277		Root MSE =	.54808

DAC	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Size	-.0095994	.0113879	-0.84	0.399	-.0319334	.0127346
Growth	.0051156	.0204626	0.25	0.803	-.0350154	.0452467
ROA	-.3224038	.2705972	-1.19	0.234	-.8530973	.2082897
CFO	.1390624	.112645	1.23	0.217	-.0818562	.3599809
CIR	-.0732308	.0580164	-1.26	0.207	-.1870121	.0405504
Leverage	.0170366	.0548823	0.31	0.756	-.0905981	.1246714
_cons	.2813539	.1046809	2.69	0.007	.0760544	.4866533

So, it has been analyzed income-decreasing earnings accruals (DAC -), in determining the effect that the variables had in directing the management of earnings.

Figure 3.14 Multiple regression model, negative discretionary accruals of sample wineries

Source	SS	df	MS		Number of obs =	2584
					F(6, 2577) =	1.41
Model	.288450448	6	.048075075		Prob > F =	0.2078
Residual	88.0242767	2577	.034157655		R-squared =	0.0033
					Adj R-squared =	0.0009
Total	88.3127271	2583	.034189983		Root MSE =	.18482

DAC	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Size	-.0012288	.0035432	-0.35	0.729	-.0081767	.0057191
Growth	-.0017569	.0053635	-0.33	0.743	-.0122741	.0087602
ROA	.0471508	.0747137	0.63	0.528	-.0993542	.1936557
CFO	-.0445447	.0312682	-1.42	0.154	-.1058579	.0167686
CIR	.0424827	.017208	2.47	0.014	.0087397	.0762256
Leverage	.0014215	.0161767	0.09	0.930	-.0302991	.033142
_cons	-.1271605	.032349	-3.93	0.000	-.1905932	-.0637278

---

[62] Significant to * 90%, ** 95%, *** 99%

Consistent with earlier evidence about absolute discretionary accruals, in the presence of negative discretionary accruals the variable CIR coefficient is positive. However, since the DAC- are decreasingly ordered, a positive relationship should be presented, since a lower presence of negative accruals associates with a lower presence of fixed assets.

Figure 3.15 Regression model, negative discretionary accruals focus on CIR

```
  Source |       SS       df       MS              Number of obs =    2584
---------+------------------------------           F(  1,  2582) =    5.89
   Model | .201109687      1  .201109687           Prob > F      =  0.0153
Residual | 88.1116174   2582  .034125336           R-squared     =  0.0023
---------+------------------------------           Adj R-squared =  0.0019
   Total | 88.3127271   2583  .034189983           Root MSE      =  .18473

---------------------------------------------------------------------------
     DAC |     Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------+-----------------------------------------------------------------
     CIR | .0403744    .0166314     2.43   0.015     .0077622    .0729865
   _cons | -.1346127    .005037   -26.72   0.000    -.1444897   -.1247357
---------------------------------------------------------------------------
```

Therefore, the relationship is more than significant with a 95% confidence interval (p = 0.015), the values obtained are valuable and consistent with those theorized, agreeing with the findings of Lan Sun and Subhrendu Rath (2009).

Table 3.8 Winery characteristics by magnitude of Earnings Management negative DAC

Portfolo ranking	N	DAC-	Size	Growth	ROA	CFO	CIR	Leverage
1 (low)	258	-0.504	8.787	0.113	0.025	-0.030	0.177	0.630
2	259	-0.209	8.715	0.070	0.025	-0.016	0.188	0.654
3	258	-0.150	8.812	0.087	0.024	-0.029	0.209	0.640
4	259	-0.114	8.813	0.055	0.022	-0.029	0.199	0.622
5	258	-0.090	8.694	0.080	0.027	-0.011	0.238	0.632
6	258	-0.071	8.782	0.087	0.027	-0.021	0.226	0.615
7	259	-0.055	8.691	0.167	0.026	-0.024	0.214	0.648
8	258	-0.039	8.769	0.088	0.021	-0.026	0.209	0.631
9	259	-0.024	8.879	0.079	0.024	-0.009	0.213	0.616
10 (high)	258	-0.009	8.981	0.080	0.029	-0.025	0.229	0.644

The previous relationships between the control variables and the discretionary accruals, such as proxy of earnings management, have not fully followed the results of previous research on the topic under discussion. The reasons can be multiple:

- limited sample size
- analysis restricted to a single sector
- numerous presences of small companies, with a different proportion compared to the total number of sample companies;
- different types of companies (cooperatives and limited companies).

Agreed with the existing tools, it was decided to resort to a study of companies divided by size classes, explaining and commenting on the results on the basis of individual classes. The theoretical assumptions mentioned above remain valid.

Table 3.9 Absolute Discretionary accruals of Italian wineries (big size)

Portfolio ranking	N	abs DAC	Growth	ROA	CFO	CIR	Leverage
1 (low)	29	0.010	0.110	0.040	0.000	0.218	0.623
2	29	0.024	0.103	0.045	0.016	0.254	0.552
3	28	0.043	0.145	0.050	-0.067	0.239	0.661
4	29	0.055	0.087	0.049	-0.020	0.214	0.588
5	29	0.074	0.035	0.035	-0.018	0.254	0.615
6	29	0.095	0.178	0.061	-0.020	0.224	0.742
7	29	0.120	0.100	0.049	-0.079	0.251	0.623
8	28	0.153	0.182	0.031	-0.003	0.213	0.666
9	29	0.213	0.532	0.051	-0.018	0.182	0.604
10 (high)	29	0.647	0.162	0.028	-0.036	0.274	0.572

Table 3.9 presents the control variables described above, except for the variable size, which is already reported by the distinction of the companies by class of turnover. Our portfolio is divided into deciles, going from an average value of Abs DAC of Portfolio 1 (Low absDAC) of 0.010 to an average value of Abs DAC of Portfolio 10 (High absDAC) of 0.647. It does not notice significant relationships, apart decreasing value of leverage in the portfolios 8,9 and 10. Therefore, it was decided to build again a multiple linear regression model of the above-mentioned control variables such as: Growth, ROA, CFO, CIR and Leverage.

Figure 3.16 Multiple regression model, absolute discretionary accruals big wineries[63]

```
  Source |       SS       df       MS              Number of obs =     288
---------+--------------------------------         F(  5,   282) =    1.35
   Model | .562431717      5  .112486343           Prob > F      =  0.2443
Residual | 23.5355433    282  .083459374           R-squared     =  0.0233
---------+--------------------------------         Adj R-squared =  0.0060
   Total | 24.097975     287   .08396507           Root MSE      =  .28889

------------------------------------------------------------------------------
  AbsDAC |     Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------+--------------------------------------------------------------------
  Growth |  .0090416   .0238978     0.38   0.705    -.0379992    .0560823
     ROA | -.3235916   .2746528    -1.18   0.240    -.8642215    .2170382
     CFO | -.0025665   .1365255    -0.02   0.985    -.2713048    .2661719
     CIR |   .091799   .1103981     0.83   0.406      -.12551    .3091079
Leverage | -.143801    .0698045    -2.06   0.040    -.2812051   -.0063969
   _cons |  .2250059   .0559458     4.02   0.000     .1148815    .3351303
------------------------------------------------------------------------------
```

As it was expected, the Leverage ratio is significant at the level of 95%** of confidence interval, with t = -2.06 and (P> | t | = 0.040). Although, from the table there is no clear relationship with the dependent variable, the regression model shows a slightly negative relation (coefficient equal to 0.1438), which is lower than alpha equal to 0.05. Hence, this variable positively related to the absolute value of discretionary accruals confirms the association between leverage and magnitude of earnings management.

Table 3.10 Absolute Discretionary accruals of Italian wineries (medium size)

Portfolio ranking	N	abs_DAC	growth	ROA	CFO	CIR	Leverage
1 (low)	149	0.007	0.080	0.031	-0.039	0.253	0.651
2	150	0.019	0.119	0.032	-0.008	0.256	0.602
3	149	0.032	0.128	0.027	-0.025	0.267	0.613
4	150	0.049	0.055	0.026	-0.020	0.271	0.639
5	149	0.067	0.060	0.025	-0.017	0.226	0.628
6	149	0.085	0.108	0.031	-0.009	0.260	0.664
7	150	0.111	0.124	0.029	-0.033	0.258	0.637
8	149	0.147	0.080	0.038	-0.022	0.259	0.609

---

[63] Significant to * 90%, ** 95%, *** 99%.

9	149	0.215	0.073	0.023	-0.008	0.215	0.620
10 (high)	150	0.664	0.059	0.027	-0.024	0.233	0.655

As for medium-sized companies, from a first observation it would appear that there is a linear relationship between Leverage and abs_DAC, as the values of portfolios 8,9 and 10 are increasing. However, by analyzing the regression model, the relationship between the variables is not significant for leverage (P> | t | = 0.668).

For every control variable, the built regression model does not show any significant relationship for a 95% confidence interval given an alpha value of 0.05.

Figure 3.17 Multiple regression model, absolute discretionary accruals medium wineries

```
   Source |       SS       df       MS              Number of obs =    1494
----------+------------------------------           F(  5,  1488) =    0.58
    Model | .38726007       5   .077452014           Prob > F      =  0.7173
 Residual | 199.551494    1488   .134107187           R-squared     =  0.0019
----------+------------------------------           Adj R-squared = -0.0014
    Total | 199.938754    1493   .133917451           Root MSE      =  .36621

   AbsDAC |     Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
----------+----------------------------------------------------------------
   Growth | -.0142453   .0227437    -0.63   0.531    -.0588584    .0303677
      ROA | -.1573446   .2107709    -0.75   0.455    -.5707843    .2560952
      CFO |   .055734   .0824457     0.68   0.499    -.1059882    .2174562
      CIR | -.0563827   .0448669    -1.26   0.209    -.1443919    .0316264
 Leverage |  .0143524   .0334308     0.43   0.668    -.0512242     .079929
    _cons |  .1517837   .0270993     5.60   0.000     .0986269    .2049405
```

Indeed, for every control variable, the built regression model does not show any significant relationship for a 95% confidence interval given an alpha value of 0.05. The wine sector in general is mostly made up of small companies. The peculiarity of our sample is that the category of small wineries constitutes 2/3 of the total. This allows us to have more information available for an empirical analysis.

Table 3.11 Absolute Discretionary accruals of Italian wineries (small size)

Portfolio ranking	N	abs_DAC	Growth	ROA	CFO	CIR	Leverage
1 (low)	274	0.007	0.036	0.024	-0.028	0.222	0.628
2	274	0.023	0.142	0.021	-0.011	0.198	0.633
3	274	0.038	0.123	0.019	-0.025	0.197	0.644

4	274	0.053	0.150	0.023	-0.023	0.177	0.658
5	274	0.070	0.137	0.027	-0.024	0.190	0.606
6	274	0.090	0.079	0.026	-0.020	0.207	0.605
7	274	0.116	0.051	0.018	-0.021	0.169	0.625
8	274	0.161	0.089	0.021	-0.023	0.172	0.686
9	274	0.238	0.117	0.022	-0.026	0.166	0.643
10 (high)	274	0.754	0.154	0.023	-0.016	0.168	0.622

From the Table 3.11 Absolute Discretionary accruals of Italian wineries (small size), it can see a positive relationship between the dependent variable (absDAC) and the control variable Cash flow from operations (CFO); while, the capital intensity ratio (CIR) tend to follow a trend opposed to the Absolute Discretionary Accruals. From the construction of the multiple linear regression model, results emerge as agreed with the theoretical position described.

Figure 3.18 Multiple regression model, absolute discretionary accruals small wineries

```
      Source |       SS       df       MS              Number of obs =    2740
-------------+------------------------------           F(  5,  2734) =    1.29
       Model |  1.05456969      5   .210913939          Prob > F      =  0.2666
    Residual |  448.098369   2734   .163898452          R-squared     =  0.0023
-------------+------------------------------           Adj R-squared =  0.0005
       Total |  449.152938   2739   .163984278          Root MSE      =  .40484

      AbsDAC |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      Growth |   .0054471   .0103857     0.52   0.600    -.0149176    .0258118
         ROA |  -.1261885   .1596822    -0.79   0.429    -.4392985    .1869215
         CFO |   .1158434   .0689554     1.68   0.093    -.0193665    .2510533
         CIR |  -.0613491   .0347952    -1.76   0.078    -.1295766    .0068785
    Leverage |  -.0024292   .0240588    -0.10   0.920    -.0496044     .044746
       _cons |   .1728653   .0188079     9.19   0.000     .1359861    .2097445
```

In Figure 3.18, there was a positive relationship between abs_DAC and CFO (coefficient value is 0.1158). This indicates that in the small Italian wineries, the increase in operating cash flows explains the increase in the absolute value of the discretionary accruals, because the relationship between the two variables is significant 10 percent, with a value of t= 1.68 and a p = 0.093*. These results are not consistent with previous research that found a negative relationship between accruals and operating cash flows, demonstrating that an improving operational performance is associated with a higher degree of accruals.

The second variable (CIR) presents a meaningful relationship at level of 90%* (p=0.078*) as was expected, following a slightly decreasing trend with the increase of the absolute discretionary accruals. The capital intensity ratio (CIR) has a negative coefficient (-

0.061), since "CIR" represents a measure whose coefficient should report negative values, as depreciation is a cost item that reduces accruals. Therefore, a lower amount of fixed assets is associated with a broader maneuver for discretionary exercise in the management of earnings by managers.

As the last analysis, the discrete presence of cooperatives in our Italian winery sample (185 out of 509), makes an earnings management analysis adequate to show the differences compared to the type of capital companies. The specific economic and financial characteristics of the cooperatives will be shown in terms of lower profitability (ROA), higher debt ratio (Leverage) and a lower weight of tangible assets on total assets (PPE).

Table 3.12 Absolute Discretionary accruals of Italian wineries (Cooperatives)

Portfolio ranking	N	ABS DAC	Size	Growth	ROA	CFO	CIR	Leverage
1 (low)	163	0,007	8,807	0,047	0,022	-0,025	0,240	0,625
2	163	0,022	8,770	0,103	0,021	-0,003	0,228	0,602
3	163	0,036	8,867	0,166	0,014	-0,018	0,261	0,635
4	163	0,051	8,709	0,159	0,019	-0,032	0,227	0,647
5	164	0,067	8,791	0,099	0,025	-0,012	0,245	0,610
6	163	0,085	8,783	0,051	0,027	-0,022	0,217	0,610
7	163	0,109	8,829	0,048	0,022	-0,021	0,232	0,631
8	163	0,145	8,769	0,081	0,016	-0,027	0,251	0,633
9	163	0,214	8,697	0,061	0,021	-0,025	0,202	0,635
10	163	0,720	8,945	0,111	0,025	-0,033	0,202	0,632

From

Table 3.12, it can see a negative relationship between the dependent variable (absDAC) and the control variables: Size, Growth and Capital Intensity Ratio (CIR). For a more detailed analysis, we relied on the individual relationships between the dependent variable and the explanatory variables, constructing simple linear regression models (Figure 3.19).

Figure 3.19 Multiple regression model, ABS DAC of sample wineries (cooperatives)[64]

Source	SS	df	MS				
					Number of obs =	1631	
					F(6, 1624) =	1.40	
Model	1.06462743	6	.177437905		Prob > F =	0.2103	
Residual	205.570758	1624	.126582979		R-squared =	0.0052	
					Adj R-squared =	0.0015	
Total	206.635386	1630	.126770175		Root MSE =	.35579	

AbsDAC	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Size	.0025555	.0086535	0.30	0.768	-.0144177	.0195287
Growth	-.0001967	.0146268	-0.01	0.989	-.028886	.0284927
ROA	.0782326	.1995035	0.39	0.695	-.3130788	.4695439
CFO	.0776904	.0821242	0.95	0.344	-.0833902	.238771
CIR	-.0719098	.040317	-1.78	0.075	-.1509885	.0071689
Leverage	.0792965	.0402659	1.97	0.049	.0003179	.1582752
_cons	.0901016	.0791585	1.14	0.255	-.065162	.2453652

Essentially, a significant relationship can be distinguished for the leverage and CIR variables. The variable "Leverage" assumes a positive relationship assume with the dependent variable, as the coefficient (0.079) of the variable takes on a negative value, having established that between the accruals and the ratio there is a positive relationship.

According to the mentioned theory, a high leverage has a positive relationship with the manipulation of profits as the companies in order to avoid breakdowns in the debt covenant agreement or any renegotiations that lead to a higher interest rate on the debt, they end up increasing earnings with the benefit of reassuring creditors.

This indicates that in the cooperative Italian wineries, the increase in leverage explains at the significant level of 95%** the increase in the absolute value of the discretionary accruals, with a value of t= 1.97 and a (P>| t | = 0.049**).

By analyzing the specific variable "CIR", this factor is statistically lower for the high Abs_DAC portfolio and statistically higher for the low abs DAC with a p-value equal to 0.075*, As we could suppose, the coefficient (-0.072) of the variable takes on a negative value, having established that between the accruals and the ratio there is a negative relationship, as the depreciation is a cost item that reduces the total accruals.

[64] Significant to * 90%, ** 95%, *** 99%.

Analyzing Limited companies, different results are found in terms of growth and profitability, showing higher and positive values.

Table 3.13Absolute Discretionary accruals of Italian wineries (Limited companies)

Portfolio ranking	N	ABS DAC	Size	Growth	ROA	CFO	CIR	Leverage
1 (low)	289	0,007	8,889	0,062	0,032	-0,036	0,235	0,629
2	289	0,022	8,991	0,138	0,027	-0,012	0,206	0,629
3	289	0,036	8,811	0,089	0,028	-0,028	0,208	0,608
4	289	0,053	8,809	0,108	0,030	-0,022	0,191	0,631
5	290	0,071	8,796	0,116	0,029	-0,022	0,205	0,619
6	289	0,091	8,798	0,119	0,029	-0,015	0,219	0,629
7	289	0,119	8,888	0,097	0,027	-0,035	0,176	0,610
8	289	0,162	8,892	0,098	0,032	-0,012	0,180	0,655
9	289	0,238	8,701	0,168	0,025	-0,020	0,183	0,631
10	289	0,717	8,769	0,126	0,025	-0,012	0,189	0,623

From Table 3.13, it can see a positive relationship between the dependent variable (absDAC) and the control variable CFO; negative relationship with the ROA.

Figure 3.20 Multiple Regression models, ABS DAC of sample wineries (Limited companies)

```
      Source |       SS       df       MS              Number of obs =    2891
-------------+------------------------------           F(  6,  2884) =    1.51
       Model | 1.45713646      6  .242856076           Prob > F      =  0.1722
    Residual | 465.297145   2884  .161337429           R-squared     =  0.0031
-------------+------------------------------           Adj R-squared =  0.0010
       Total | 466.754281   2890  .161506672           Root MSE      =  .40167

------------------------------------------------------------------------------
      AbsDAC |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        Size |  -.0063173   .0069379    -0.91   0.363    -.019921    .0072865
      Growth |   .0053476   .0110801     0.48   0.629    -.0163781   .0270733
         ROA |  -.2581785   .1516409    -1.70   0.089    -.5555139   .0391569
         CFO |    .089316   .0636148     1.40   0.160    -.0354191    .214051
         CIR |  -.0395685   .0357713    -1.11   0.269    -.1097084   .0305714
    Leverage |  -.0355303     .03249    -1.09   0.274    -.0992362   .0281756
       _cons |   .2461173   .0636056     3.87   0.000     .1214002   .3708344
------------------------------------------------------------------------------
```

There was a positive relationship between abs_DAC and CFO (coefficient value is 0.089), but not significant at any level (* 90%, ** 95%, *** 99%.).

The variable "ROA", it follows more or less a decreasing trend as the accruals rise, with a p value equal to 0.089*. The coefficient (-0.258) of the variable takes on a negative value,

differently from that established between the positive relationship between accruals and the ROA. This means that healthier, more profitable limited companies make less use of earnings management practices.

Multiple regression models applied to different areas of Italian wineries

The nature of the earnings management phenomenon could be expressed in different ways depending on whether the area of Italy is considered. Of course, here, given the limited number of observations, the results will have to be evaluated with due caution, in order not to misrepresent a practice that is statistically and significant interpretable for a large number of observations detected.

Figure 3.21 Multiple Regression models, ABS DAC of sample wineries (North-west of Italy)[65]

Source	SS	df	MS		
Model	2.16508452	6	.36084742		
Residual	441.717492	1028	.429686276		
Total	443.882576	1034	.429286824		

Number of obs = 1035
F(6, 1028) = 0.84
Prob > F = 0.5392
R-squared = 0.0049
Adj R-squared = -0.0009
Root MSE = .6555

AbsDAC	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Size	-.019984	.0191298	-1.04	0.296	-.0575219	.0175538
Growth	.0027118	.0285575	0.09	0.924	-.0533259	.0587495
ROA	-.4676224	.4061515	-1.15	0.250	-1.264603	.3293583
CFO	.1030039	.1767733	0.58	0.560	-.2438737	.4498815
CIR	-.111585	.1064284	-1.05	0.295	-.3204267	.0972568
Leverage	.0410359	.092104	0.45	0.656	-.1396973	.2217692
_cons	.3895794	.1788545	2.18	0.030	.0386177	.740541

In the case of North-west Italian wineries (Figure 3.21), no significant relationship, for confidence intervals at the 90% * level, 95% **, 99% ***, may be indicated.

Figure 3.22 Multiple Regression models, ABS DAC of sample wineries (North-east of Italy)[66]

Source	SS	df	MS		
Model	.137100738	6	.022850123		
Residual	36.9577475	1370	.026976458		
Total	37.0948482	1376	.026958465		

Number of obs = 1377
F(6, 1370) = 0.85
Prob > F = 0.5336
R-squared = 0.0037
Adj R-squared = -0.0007
Root MSE = .16425

AbsDAC	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Size	.0043906	.0039175	1.12	0.263	-.0032944	.0120756
Growth	.0013126	.0085237	0.15	0.878	-.0154083	.0180335
ROA	.0639415	.100982	0.63	0.527	-.1341545	.2620375
CFO	.060962	.0379346	1.61	0.108	-.0134541	.1353781
CIR	-.0034449	.0208502	-0.17	0.869	-.0443466	.0374568
Leverage	.0051027	.0192885	0.26	0.791	-.0327355	.0429409
_cons	.0759567	.0376043	2.02	0.044	.0021884	.149725

---

[65] The sample includes: Emilia-Romagna, Lombardia, Piemonte and Valle D'Aosta.
[66] The sample includes: Friuli-Venezia-Giulia, Trentino-Alto-Adige and Veneto.

Figure 3.23 Linear Regression, ABS DAC and Cash flow from operations (North-east of Italy)

```
  Source |       SS       df       MS              Number of obs =    1378
---------+------------------------------           F(  1,  1376) =    2.77
   Model | .074580265     1  .074580265            Prob > F      =  0.0962
Residual | 37.0229481   1376  .026906212           R-squared     =  0.0020
---------+------------------------------           Adj R-squared =  0.0013
   Total | 37.0975284   1377  .026940834           Root MSE      =  .16403


  AbsDAC |     Coef.   Std. Err.      t     P>|t|    [95% Conf. Interval]
---------+--------------------------------------------------------------
     CFO | .0629517   .0378113     1.66    0.096   -.0112224    .1371258
   _cons | .1212237    .00449     27.00    0.000    .1124157    .1300316
```

While, in the case of companies in the East, although at a general level no significant relationship can be associated between the control variables and the dependent variable (Figure 3.22), a modest single relationship is found between the operating cash flows and the Absolute Discretionary accruals, with a positive coefficient (0.063), and with t = 1.66 and P> | t | = 0.096* (

Figure 3.23).

Figure 3.24 Multiple Regression models, ABS DAC of sample wineries (Center of Italy) [67]

```
  Source  |     SS       df       MS              Number of obs =    1194
----------+------------------------------           F(  6,  1187) =    0.83
   Model  | .087164943     6   .014527491          Prob > F       =  0.5464
Residual  | 20.769373   1187   .017497366          R-squared      =  0.0042
----------+------------------------------           Adj R-squared = -0.0009
   Total  | 20.8565379  1193   .017482429          Root MSE       =  .13228

   AbsDAC |     Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
----------+----------------------------------------------------------------
    Size  | -.0085256   .0043934    -1.94   0.053    -.0171452     .000094
  Growth  |  .0056623   .0088454     0.64   0.522    -.0116921    .0230166
     ROA  | -.0009911   .0714152    -0.01   0.989    -.1411052     .139123
     CFO  | -.0092438   .0326427    -0.28   0.777    -.0732876    .0548001
     CIR  |  .0086132   .0162215     0.53   0.596    -.0232129    .0404392
Leverage  | -.0131872   .0174685    -0.75   0.450    -.0474599    .0210854
   _cons  |  .1899837   .0385099     4.93   0.000     .1144287    .2655387
```

Going to analyze the wineries of central Italy, we note that in the regression model outlined, a significant 90% * relationship can be detected as far as the company size is concerned, with a negative coefficient (-0.008), and with t = -1.94 and a P> | t | = 0.053. The negative association between the two Abs_DAC and Size variables can be explained by the fact that a bigger winery, enjoying more stability in management ordinary activities, since it has a greater amount available resources to be used to cover any risks deriving from seasonal trends. Hence, this requires less implementation of earnings management practices.

In Figure 3.25, the relationship between the dependent variables (AbsDAC) and the explanatory variables for the wineries of southern Italy is analyzed.
There was a positive relationship between abs_DAC and CFO (coefficient value is 0.2833). This indicates that in the southern Italian wineries, the increase in operating cash flows explains the increase in the absolute value of the discretionary accruals, because the relationship between the two variables is significant 5 percent, with a value of t = 2.06 and a P> | t |= 0.040**.
These results are not consistent with previous research, demonstrating that an improving operational performance is associated with a higher degree of accruals.

Figure 3.25 Multiple Regression models, ABS DAC of sample wineries (South of Italy)

---

[67] The sample includes: Abruzzo,

Source	SS	df	MS		Number of obs =	912
					F(6, 905) =	1.17
Model	1.26754482	6	.21125747		Prob > F =	0.3203
Residual	163.45741	905	.180615923		R-squared =	0.0077
					Adj R-squared =	0.0011
Total	164.724955	911	.180817733		Root MSE =	.42499

AbsDAC	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
Size	.0145251	.016069	0.90	0.366	-.0170118	.046062
Growth	-.0026293	.0155822	-0.17	0.866	-.0332109	.0279522
ROA	.0445247	.3909372	0.11	0.909	-.7227242	.8117736
CFO	.283263	.1376283	2.06	0.040	.0131552	.5533708
CIR	-.1164188	.0734749	-1.58	0.113	-.2606198	.0277822
Leverage	-.0125269	.0600892	-0.21	0.835	-.1304574	.1054036
_cons	.0970118	.1390628	0.70	0.486	-.1759112	.3699348

3.6 T Test of different groups of Italian wineries (Abs_DAC)

It proceeded to apply a statistical analysis, t test in order to find out whether the difference between the averages of the Absolute Discretionary accruals of two groups (co-operatives and limited companies) was significant or not. The results deriving from the t test show that sample 1 (cooperative) is less numerous (1631) and with a lower average of Abs_DAC (0.1456). However, the reported difference is not considered significant at the 95%** confidence interval, with a value of t = 0.4930 and a Pr (| T |> | t |) = 0.6220, (Figure 3.26).

Figure 3.26 T test between cooperatives (group 1) and Limited companies (group 0)

```
Two-sample t test with equal variances

    Group |      Obs         Mean      Std. Err.    Std. Dev.    [95% Conf. Interval]
----------+--------------------------------------------------------------------------
        0 |     2891     .1514966      .0074743     .4018789     .1368411     .1661521
        1 |     1631     .1456034      .0088162      .356048     .1283112     .1628957
----------+--------------------------------------------------------------------------
 combined |     4522      .149371      .0057393     .385947      .1381191      .160623
----------+--------------------------------------------------------------------------
     diff |               .0058931      .011953                 -.0175407     .0293269
--------------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =    0.4930
Ho: diff = 0                                        degrees of freedom =      4520

    Ha: diff < 0                  Ha: diff != 0                   Ha: diff > 0
 Pr(T < t) = 0.6890       Pr(|T| > |t|) = 0.6220          Pr(T > t) = 0.3110
```

From the previous results, no significant difference was found: Therefore, the t test was applied at the level of a single fiscal year, in order to investigate whether in some periods significant differences are found between cooperatives and limited companies.

Figure 3.27 T test between cooperatives (1) and Limited companies (0) (fiscal year 2015)

```
Two-sample t test with equal variances

    Group |      Obs         Mean      Std. Err.    Std. Dev.    [95% Conf. Interval]
----------+--------------------------------------------------------------------------
        0 |      325     .1118036      .0068836     .1240966     .0982613     .1253459
        1 |      183     .0893536      .0084038     .1136839     .0727723      .105935
----------+--------------------------------------------------------------------------
 combined |      508     .1037163      .0053605     .1208188     .0931849     .1142478
----------+--------------------------------------------------------------------------
     diff |                 .02245     .0111324                  .0005785     .0443214
--------------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =    2.0166
Ho: diff = 0                                        degrees of freedom =       506

    Ha: diff < 0                  Ha: diff != 0                   Ha: diff > 0
 Pr(T < t) = 0.9779       Pr(|T| > |t|) = 0.0443          Pr(T > t) = 0.0221
```

As before, the cooperatives represent the Group (1), while the limited companies the group (0). From the test performed (Figure 3.27), there is a significant difference between the averages of the two samples (0.0225), as regards the value of the absolute discretionary accruals.

The reported difference is considered significant at the 95%** confidence interval, with a value of t = 2.0166 and a Pr (| T |> | t |) = 0.0443, (Figure 3.27).

The results previously discussed concerning the multiple regression model among the Italian wineries of different sizes, have highlighted a difference in the relationship with the absolute discretionary accruals, between small and medium-large companies. Therefore, through further analysis, it was decided to test whether this difference between the two aggregates could be significant. It was decided to carry out a "t test" between small and medium-large size wineries.

Figure 3.28 T test between small (group 1) & medium-big size wineries (group 0)

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	1782	.1404844	.0084019	.3546757	.1240058	.156963
1	2740	.1551159	.0077362	.4049497	.1399466	.1702852
combined	4522	.14935	.0057393	.3859467	.1380981	.1606019
diff		-.0146315	.0117446		-.0376566	.0083935

diff = mean(0) - mean(1)   t = -1.2458
Ho: diff = 0   degrees of freedom =   4520

     Ha: diff < 0   Ha: diff != 0   Ha: diff > 0
  Pr(T < t) = 0.1064   Pr(|T| > |t|) = 0.2129   Pr(T > t) = 0.8936

The results deriving from the t test show that sample 1 (small wineries) is more numerous (2740) and with a higher average of Abs_DAC (0.1576) as regards the value of the absolute discretionary accruals.

The reported difference (-0.0146) is considered not significant at the 95%** confidence interval, with a value of t = - 1.2458 and a Pr (| T |> | t |) = 0.2129, (Figure 3.28).

Finally, it was decided to detect whether there is a substantial difference in the mean of absolute discretionary accruals between the northern Italian wineries and the remaining wineries belonging to the central south.

Figure 3.29 T test between North (1) & South center (0)

```
Two-sample t test with equal variances

    Group  |     Obs        Mean     Std. Err.    Std. Dev.    [95% Conf. Interval]
-----------+-------------------------------------------------------------------
        0  |    2108     .1421613    .0065082     .2988099     .1293981    .1549244
        1  |    2414     .1556669    .0091257     .4483668     .1377719    .1735618
-----------+-------------------------------------------------------------------
 combined  |    4522      .149371    .0057393      .385947     .1381191     .160623
-----------+-------------------------------------------------------------------
     diff  |            -.0135056    .0115046                  -.0360602     .009049
-----------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                    t =   -1.1739
Ho: diff = 0                                    degrees of freedom =      4520

    Ha: diff < 0                Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.1202      Pr(|T| > |t|) = 0.2405           Pr(T > t) = 0.8798
```

The reported difference (-0.013) is not considered significant at the any confidence interval (90%*, 95%**, 99%***), with a value of t = - 1.1739 and a Pr (| T |> | t |) = 0.2405, (Figure 3.29). So, the hypothesis has been rejected.

Hypothesis 5: There is a significant difference in manage earnings between wineries of distinct areas of Italy.

Conclusion

The main objective of the present study was to analyze and to enrich the understanding of earnings management practices in Italian wineries, a sector with high added value which is the spearhead of the Italian agri-food sector.

In the first part of the study, the various techniques, reasons and models that have shaped modern literature have been explained. After describing the evolution of the wine sector in the current context, at a global and national level, it has been analyzed the structure of the industry and the different types of wineries in this sector. The empirical analysis involved 509 wineries in a ten-year period of time (2008 to 2017). Therefore, overall, 5090 statutory financial statements have been reclassified extrapolated from the AIDA database providing the necessary validity and longitudinal robustness. The methodology adopted as the first analysis has been represented by the approach used by Burgstahler and Dichev in 1997, according to which the presence of discontinuity in the frequency of distribution of profits is an indicator of earnings management practices to achieve certain objectives. The findings were consistent with earnings management to avoid losses, as the observations that presumed losses are less than would have been expected from a normal symmetric distribution with mean 0 and variance 1. Thus, the evidence suggests that 26% to 34% of the wineries with slightly pre-managed losses exercise discretion to report earnings. From these results, we can only confirm the hypothesis previously taken:

- *H1: Italian wineries with small losses manage earnings upward, just above the zero thresholds.*

In another perspective, similar results come from the frequency distribution of change in earnings, as the actual number of observations is lower than expected in intervals considered. Since the area adjacent to the left of the first negative interval has a deep gap, the calculation of the earnings management cases was consequential. Evidence suggests that 54% to 66% of the wineries with greater negative earnings changes exercise discretion to report earnings. From these results, we can only confirm the hypothesis previously taken.

Thus, the hypothesis theorized initially:

- *H2: Italian wineries manage earnings to avoid large and negative earnings changes.*

In the second part of the empirical analysis, the Modified Jones model was applied, in order to obtain, with a certain degree of reliability, the value of the residuals of the model, or Discretionary accruals, which are considered as a proxy for earnings management.

In addition, it was preferred to investigate the association between earnings management and the characteristics of the examined wineries. Therefore, it has been analyzed the relationship

between six explanatory variables (Size, Growth, ROA, CFO, CIR, Leverage) and the dependent variable (Discretionary accruals).

The relationships between the control variables, chosen above all on the basis of previous research, and the "Discretionary Accruals" dependent variable, both in absolute value and in the positive and negative components, did not offer the desired results; only single significant relationships in almost all figures have been found (the Capital Intensity Ratio). Therefore, it was decided to eliminate a "Size" control variable and to investigate whether the associations could be considered significant at an alpha value of 0.05, confidence interval 95%, for the individual turnover classes. Thus, from the classification developed at the beginning of the chapter, the classes were divided into three categories: large, medium and small; based on the turnover of the last accounting period.

The hypothesis assumed was:

- *H3: There is a significant difference in manage earnings among different size's classes of Italian wineries.*

The analysis did not bring satisfactory results for the medium classes; while a significant 95%** relationship, with (P> | t | = 0.040), has been found in the large classes between the dependent variable (abs_DAC) and the explanatory variable (Leverage), confirming the association between leverage and magnitude of earnings management. A significant relationship at 90%* has been found in the small class between the control variables (CFO and CIR) and the dependent variable.

The results deriving from the t test show that, there is not significant difference in manage earnings between different size's classes, between the Italian small wineries and medium-big size wineries. The hypothesis is rejected at the level of significance of 95% of the confidence interval with a value of t = - 1.2458 and a Pr (| T |> | t |) = 0.2129**.

Finally, there were no significant differences between cooperatives and limited companies, presenting similar values in the decile-divided portfolio of control variables associated with the absolute discretionary accruals.

Analyzing the regression model, the co-operatives report significant 90% * relationships with the operating cash flows (positive relationship) and the capital intensity ratio (negative relation), not giving rise to strong evidence.

While the limited companies, have a negative relationship with the return of assets, reporting that healthier, more profitable limited companies, make less use of earnings management practices.

The results deriving from the t test show that, the reported difference between cooperatives and limited companies is not considered significant at the 95%** confidence interval, with a value of t = 0.4930 and a Pr (| T |> | t |) = 0.6220. The hypothesis:

- *H4: There is a significant difference in manage earnings in Italy between cooperatives and limited companies.*

It has been rejected at any level of the confidence interval (90%*, 95%**, 99%***).

Thus, the t test was applied at the level of a single fiscal year, in order to investigate whether in some periods significant differences are found between cooperatives and limited companies.

In 2015, a significant difference has been detected in manage earnings between cooperatives and limited companies, the reported difference is considered significant at the 95%** confidence interval, with a value of t = 2.0166 and a Pr (| T |> | t |) = 0.0443.

Thus, the Hypothesis 4A was confirmed, at least for the fiscal period 2015:

- *Hypothesis 4A: There is a significant difference in manage earnings in Italian between cooperatives and limited companies in different fiscal years.*

It was decided to detect whether there is a substantial difference in the mean of absolute discretionary accruals between the northern Italian wineries and the remaining wineries belonging to the central south. No significant differences were associated to the sample, with Pr (| T |> | t |) = 0.2405.

- *Hypothesis 5: There is a significant difference in manage earnings between wineries of distinct areas of Italy.*

The hypothesis has been rejected at any confidence interval (90%*, 95%**, 99%***).

To conclude, the work just ended lends itself to be usable for other researchers that analyze this theme. The study covered only two approaches: Distribution of Earnings Models (Burgstahler and Dichev (1997), and the aggregated accrual model (Modified Jones model), limiting itself to investigating only the accruals-based model, not detecting the possibility of real earnings management from the Italian wine sector, a phenomenon that finds greater application in large listed companies.

Therefore, I invite that future researches to deepen the issue of earnings management even in the cooperative world, providing an important contribution to the literature.

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Appendix

History

Wine is a long-standing product for Italian culture, which has replaced the value of quality with quantity. The awareness of a high-quality product is also combined with the renewed attention to the beneficial effects of a drink that can help prevent many diseases if taken in the proper quantity.

The history of wine dates back to the fifth millennium BC, in the Caucasus area around, and then spread to Sicily and southern Italy, Spain and France, with the influence of the Greek and Phoenician peoples; afterwards in Northern Europe, under the influence of the Roman people. [68] The wine was reserved only for particular social contexts, among a restricted circle of people. But with the advent of the Romans, the production of wine increased, and its use became a prerogative even from the lower classes of society. The power of the Republican Rome determined a development of the demand from the qualitative and quantitative point of view and this led to the structuring of a solid enological industry[69].Furthermore, they were excellent winemakers and knew many techniques that are now used in oenology.[70]

In the seventeenth century, the discovery and diffusion of new drinks (chocolate, coffee and tea) led to a further improvement process in the production of wine. [71]At the end of the nineteenth century, the Italian wine-growing system had a growth phase, thanks to important activities and research from schools and agricultural institutions to support the development of the export and production. Although, there were still issues regard the establishment of a wine legislation, unlike the France that valorized the most prestigious productions in the logic of wines linked to the territory and identified on the basis of their territorial origin.

Only after the Second World War, national discipline of the wines with denomination (dprn 630 of 1963) was obtained, following the issuance of the first Community Regulation for wine in 1962.

A period of development for the Italian wine sector; the overall wine supply is growing, exports are growing and the share in the production and consumption of wines with a name increases.[72]All this lead, in following years to a substantial issue, the overproduction. In

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[68] Raffaele Buono, Gioacchino Vallariello (2002). *Introduzione e diffusione della vite (Vitis vinifera L.) in Italia,* pp. 39-46.

[69]Pomarici, E; Boccia, F (2006). *La filiera del vino in Italia: struttura e competitività*, p.142

[70] Renzo Angelini ed., *La vite e il vino*, https://www.imagelinenetwork.com/materiali/Altro/File/CeC_VITE_Estratto_Web.pdf, (Accessed September 11, 2018).

[72] Da Fies Sandra (2014). *Strategie di competitività delle imprese vitivinicole venete,* pp.8-9.

addition, in the 80's methanol scandal broke out, causing negative effects to the image of Italian wines, but positive outcomes in terms of technical evolution of production and communication. In fact, the environment and current organizations aim to spread an image of the Italian system based on prestigious and high-quality wines.

Classification of wines

The climatic conditions, the numerous vineyards, the geological characteristics and the conformation of the territory make Italy, the ideal place for the production of quality red wines, sometimes of excellent value such as: Barolo, Brunello di Montalcino, Chianti but also excellent white wines such as Fiano di Avellino and Greco di Tufo, as well as the highest quality Sicilian passitoes , an important present in the most prestigious restaurants. They literally invaded the sparkling international markets with the refermentation in autoclave: Asti and Prosecco and Spumanti obtained with Classic method, in the areas of Franciacorta, Oltrepò Pavese, Alta Langa, peaks of excellence able to compete with the most famous French champagne. [73]

The main classification of wine products, since August 1, 2009, regards the different categories of wine can be distinguished in:

- Wine (formerly "table wine").
- Varietal wine and / or vintage wine.
- IGP, Protected Geographical Indication Wine.
- DOP, Wine with Protected Designation of Origin.

With the clarification that the categories provided by the laws on denominations refer solely to the quality of the production process, not to the quality of the product. Notwithstanding the provisions of the Community Regulation, the Member States may continue to use their own traditional terms referring to the Denominations of Origin and Geographical Indications.

The Italian classification establishes that the mark for IGT wines can be used in place of the European correspondent for IGP wines, while the classification of DOC and DOCG wines remain as Italian specificity, but both are expressed under the corresponding abbreviation DOP, which absorbs both.

Generic wine

The wines belonging to this category derive from grapes authorized without territorial restrictions or vine typology and without particular requirements that regulate their production except those of a hygienic-sanitary nature. On the label must necessarily report the name of the

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[73] https://www.accademiasommeliers.it/upload/file/Dispense/Enografia%20Italiana%201.2.pdf , (Accessed September 10, 2018)

bottler, while the indication of color (red, white or rosé) and vintage is optional. It is expressly forbidden to refer to the vines used. It would be natural to think that these wines are of low quality, but this judgment is not essentially true. In fact, it may happen that a so-called table wine arises from an ideological choice of refusal of classification rules or, more easily, from the simple commercial need to renounce the title in order to be able to act freely on price.[74] It is true that these wines are subject to minor controls, without specific quality characteristics, but this does not mean that they are of low quality or that they are not genuine.

Varietal Wine

"The wines deriving for at least 85% from a certain grape variety can show on the label the indication of the main vine. However, only varietal wines from international vines are eligible (Cabernet, Cabernet Franc, Cabernet Sauvignon, Chardonnay, Merlot, Sauvignon, Syrah). As for common wines, it is compulsory to indicate on the label the name of the bottling company, while the vintage remains optional"[75].

IGP - Protected Geographical Indication

The term protected geographical indication, better known by the acronym IGP, indicates a mark of origin that is attributed to those agricultural products and foodstuffs for which a certain quality reputation or other characteristic depends on the geographical origin, and the whose production, processing and / or processing takes place in a specific geographical area. To obtain the I.G.P., at least one phase of the production process must take place in a particular area. Who produces I.G.P. must comply with the strict production rules established in the product specification, and compliance with these rules is guaranteed by a specific control body.[76]

D.O.P. - Denomination of Protected Origin

D.O.P. is a trademark of legal protection of the denomination that is attributed - usually by law - to those foods whose peculiar qualitative characteristics depend essentially or exclusively on the territory in which they are produced and processed. The geographical environment includes both natural factors (climate, environmental characteristics), and human factors (production techniques handed down over time, craftsmanship, know-how) that, combined together, make it possible to obtain an inimitable product outside a specific area productive. A product, in order to be D.O.P., the phases of production and processing must take place in a defined geographical area. Who makes D.O.P. must comply with the strict production

[74]http://www.vinicartasegna.it/classificazione-dei-vini-doc-e-docg/, (Accessed September 10, 2018).
[75]http://www.vinicartasegna.it/classificazione-dei-vini-doc-e-docg/, (Accessed September 10, 2018).
[76] http://www.enotecadei50.com/la-classificazione-dei-vini-italiani-doc-docg-dop-igt-igp/, (Accessed September 10, 2018).

rules established in the product specification, and compliance with these rules is guaranteed by a specific control body.[77]

DOP and IGP wines: With 543 certified products, Italy holds the record in Europe out of a total of 1,586 certified wines, followed by France (435), Greece (147), Spain (131), Portugal (40). In 2017, DOP and IGP wines accounted for two thirds of total production, generating a production value of 6.8 billion euro[78].

IGT wines with Typical Geographical Indication

These wines take their name from the geographical area of production of the grapes from which they are obtained, and the grapes used must come for a minimum quota equal to 85 percent exclusively from this geographical area, with the organoleptic characteristics indicated. In order to obtain the IGT classification it will observe a production specification drawn in its essential characteristics by the European regulation for all IGP wines less restrictive than those in force for DOP wines, ie DOC and DOCG, but specifying anyway:

- Maximum yield of grapes per hectare
- The performance of processing of grapes in wine
- Minimum natural alcohol content
- Consumer alcohol content

For IGT wines, without prejudice to the obligation to specify the bottling company, it is legitimate to indicate in the label in addition to the territory of origin, the vine, color and vintage. Although the IGT classification corresponds to the lowest level of denominations of origin, it is possible to find within this classification also wines of great value, the result of serious and careful work by good producers.[79]

D.O.C. - Designation of Controlled Origin

D.O.C. wines they are regulated by a specification and are characterized by well-defined areas of origin, traditionally suited to quality wines. It is clear that the more the area of origin becomes smaller and the more the indications increase, the more the number of producers and the quantity of wine that can be produced is reduced; all this is synonymous with the growing

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[77] http://www.enotecadei50.com/la-classificazione-dei-vini-italiani-doc-docg-dop-igt-igp/, (Accessed September 10, 2018).

[78] https://www.efanews.eu/item/2934-il-settore-del-vino-in-italia.html, (Accessed September 10, 2018).

[79] http://www.vinicartasegna.it/classificazione-dei-vini-doc-e-docg/, (Accessed September 10, 2018).

quality of the wine that is produced. [80]The DOC wines must express a peculiar character strongly linked to the territory of grape cultivation and respect, in all stages of production, the requirements of the reference specification (area and production conditions, vine, yield per hectare, minimum alcohol content, the duration of any aging in wood and / or aging in bottle, dry extract, total acidity ...).

In addition to the certainty of the area and the vine of origin, the word DOC is also a guarantee of quality since, before being able to be traded with this title, the wines must pass the evaluation by a team of experts of the chemical-physical characteristics and organoleptic.[81]

D.O.C.G. - Designation of Origin and Guaranteed

D.O.C.G. wines they are regulated by a specification and are characterized by a well-defined area of origin, also with indication of sub-area, up to restrict the area to a municipality, a fraction, a farm, a farm or a vineyard; the area is typically quite narrow and is the one most used to produce that wine. A D.O.C.G. may be a restriction of the same D.O.C., e.g. It may be relative to a more restricted area of the D.O.C. area, or it may be only that relative to a denomination (e.g. Superior).[82]

The law provides that the name D.O.C.G. can be attributed to a wine that has already been recognized as DOC for at least 5 years. Prestige and status are recognized in the high intrinsic quality characteristics, but also effect the incidence of natural, human and historical factors that have acquired renown and value commercial at national and international level. The disciplinary to be observed to obtain the DOCG classification punctually establish procedures and controls throughout the production cycle from the vineyard to the bottle. The law also establishes the maximum capacity of the bottles marketed which cannot exceed 5 liters.[83]

The disciplinary of D.O.C.G. wines cover the same types of rules as D.O.C. but the values to be respected are more stringent. The analysis of the characteristics of the wine are in fact verified both in the production phase and after the bottling, when a tasting is also carried out by a special commission of experts that performs a sensorial evaluation. This is why the guarantee expressed by the DOCG title is completely reliable.[84] Each individual bottle must be equipped with a state label, i.e. a band with an alphanumeric code issued by the State. This band is

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[80] http://www.enotecadei50.com/la-classificazione-dei-vini-italiani-doc-docg-dop-igt-igp/, (Accessed September 10, 2018).

[81] http://www.vinicartasegna.it/classificazione-dei-vini-doc-e-docg/, (Accessed September 10, 2018).

[82] http://www.enotecadei50.com/la-classificazione-dei-vini-italiani-doc-docg-dop-igt-igp/, (Accessed September 10, 2018).

[83]Morganti, Marzia Tempestini (2001). *I piaceri del vino. Degustazione, abbinamenti e ricette*, p.81

[84] http://www.vinicartasegna.it/classificazione-dei-vini-doc-e-docg/, (Accessed September 10, 2018).

assigned to the bottlers for each individual bottle of wine produced. The indication of the vintage is also mandatory on the label.

Several wine processing methods

Depending on the different wine processing methodology, a further distinction of the wine category can be defined in:

• **Conventional wine**: During the year, before harvesting the grapes, the farmers to avoid fungicides and other parasites that could weaken or ruin the crop, carry out a series of chemical treatments that keep the vine healthy, guaranteeing stable and optimal, increasing the quantity and reducing the risk of a bad crop due to irregular weather conditions deriving from particular seasons and / or years. However, these treatments have significant costs and with consequent environmental impact, if in case of overuse, the chemicals that percolate in the ground can create problems to the next aquifers.

• **Natural wine**: the product goes through all the phases from harvest to bottling without any use of artificial substances in full respect of the soil, of the plants and ultimately, of nature. There is no regulation about it, "however, the major producers of natural wine producers in Italy (VinNatur and ViniVeri) self-regulated themselves, developing rather strict protocols for permitted practices in the vineyard and in the cellar "[85].

• **Organic wine**: with reference to the EU implementing regulation n. 203/2012, organic crops are performed without the use of synthetic chemicals. However, the use of copper in the treatment of plants is still allowed[86], although in the last period the choice of copper gluconate was adopted which incorporates a minimum percentage of mineral copper. The main difference between organic wine and natural wine is that, in the first during the vinification and refining phase, producers can freely use selected yeasts, chemical additives and / or adjuvants of various types.

• **Biodynamic wine**: the wine obtained from grapes produced from biodynamic agriculture[87]. In the absence of international regulation, Demeter International has established standards that represent the global references for biodynamic production.

In Italy, the Demeter protocol on biodynamic wine production establishes that:

- the harvesting of the grapes must be exclusively manual;
- indigenous yeasts (from grapes) are the only ones allowed during vinification and aging;

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[85] http://www.wining.it/vino-naturale-biologico-biodinamico-scopri-le-differenze/ , (Accessed September 11, 2018).

[86] Copper in the long run causes problems at the phytotoxic level and soil depletion.

[87] The agricultural practices that are carried out in full respect of nature and in promoting the fertility and vitality of the land, following the rhythms of nature (cosmic and lunar cycles), obtaining from the breeding of animals, the natural fertilizer necessary to increase the vitality of the soil.

- it is forbidden to increase the natural alcohol content (through sugaring);
- the use of products of animal origin is prohibited;
- The use of silicone plugs is not permitted.[88]

Enoturism in Italy and the modern consumer

"The modern consumer makes sure that the product has all the indications it needs, every type of information must be stated on the label, it must be certain of the quality of the wine it is buying. A consumer who chooses a particular wine in such a way as to identify himself, often makes the choice based on the territory that is able to evoke sensations, memories, ties. On the wave of these data and trends, producers have decided to focus more and more on the tasting process, a rather trendy trend that reflects the desire, satisfaction and aspiration of a large slice of consumers" [89]. This move has allowed them to acquire more value in terms of image and product enhancement, ensuring a competitive position in the market. Furthermore, it has enabled us to meet the new needs and desires of modern consumers who pay ever more attention to the environment, sustainability, quality and the pursuit of unique natural experiences. "The tasting, the visit to the winery and any type of event of this kind, collects aspects of tradition, the typicality of the territory, the local product and represents a complete sensory experience for the end user".[90]

From this year, the wineries that want to make known and promote wine in places and areas of production, and tell the beauty of the natives, will have access to simplifications, facilitations and tax breaks for farms, encouraging the development of wine tourism, that is all the tourist activities dedicated to the discovery and cultural and enophile enjoyment of the vineyard, the wine and its territory.

Enoturism, as a territorial heritage, quality of service and accessibility, allows the sector to cultivate a broad and shared vision in terms of economy, employment and the ability to restore a positive image of our territories.[91] The territory to which the recurrent choice of uniting quality and geographical origin inevitably binds, widens the possibility of promoting and enhancing the image and identity of the wine itself. Not only that, the enocorrelated activities have a high

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[88] https://www.demeter.it/standards-demeter/ , (Accessed September 11, 2018).

[89] Di Noia Davide (2016). *Smart Agrifood: the wine tourism phenomena and internationalization patterns in the wine sector. Puglia and Veneto: a comparison of two regions*, pp.4-5

[90] Di Noia Davide (2016). *Smart Agrifood: the wine tourism phenomena and internationalization patterns in the wine sector. Puglia and Veneto: a comparison of two regions*, pp.4-5

[91] http://www.movimentoturismovino.it/it/news/nazionali/0/0/1335/manovra-filiera-turismo-vino-riconoscimento-enoturismo-e-risultato-storico-dopo-25-anni-di-attivita/, (Accessed October 13, 2018)

and positive economic impact, favoring the expansion of a wide supply chain, well beyond the rigid production and distribution of the product.

The numbers of wine tourism are constantly growing (for arrivals / flows of access and turnover), but it is essential that this quantitative development also corresponds to the qualitative development of the service offered by the enotourist supply chain. Every year, more than 15 million tourists decide to discover the Italian wineries, their wine and the best Italian wine experience. "A sector that today generates a tourist turnover of almost 3 billion euro a year"[92] and that from now on will be able to implement a further change of gear in favor of the rural territories and the Italian vineyard. Likewise, it should not be forgotten that international competition is not only fierce, but also unpredictable: just think of the climate changes that today make enotourist destinations even previously unthinkable European or North American regions. It is, therefore, a sector to be promoted and of enormous potential, in some countries, perhaps, more than in others. In particular, since December 2017, enoturism is part of Italian legislation. The tourist and cultural activities linked to this sector are therefore recognized and encouraged, enoturism finally conquers its first historical regulatory framework after 25 years of activity. The text, which introduces the chapter "enoturism" in the financial law, provides for the possibility of invoicing tastings, visits to the winery, enotourist packages and experiential collections. Other important elements such as certification and training of enotourist operators, road signs, the creation of an observatory on enoturism.

The intent of the law on enoturism is also to facilitate and simplify the exercise of these activities, equating them to the farm. However, the growth of the sector depends very much on the level of operator training and the economic and social synergies that can be created. The training of personnel, both of the private operator directly involved in the enotourist supply chain, and of the public operator involved in the governance of the territory for enotourist purposes, is a fundamental step for the improvement of the planning, organization and management of the territory systems service, to benefit of wine tourists.

"This direction has long been followed in France, where the promotion of wine and agri-food is conducted homogeneously and without parochial diatribes or internal rivalries, which instead persist in the Italian production scenario"[93]. Furthermore, the management of reception and the mastery of foreign languages seem to be the most necessary and appropriate skills in this regard Italian wine, therefore, must seize the opportunity that emerges from the future growth of

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[92] https://www.ilgiornaledelcibo.it/legge-enoturismo-cosa-cambia/, (Accessed October 13, 2018)
[93] https://www.ilgiornaledelcibo.it/legge-enoturismo-cosa-cambia/, (Accessed October 13, 2018)

excellence in catering and improve the quality of our labels, continuing to focus on quality traditions. It would be nice to recover and support a food-related tourism in an organic way.

Economic and financial needs in winery companies

From an economic-financial point of view, this wine activity is one of those that activate a single production cycle whose duration extends over a long period. This fact determines a manifestation of infrequent revenues and a high financial requirement linked to the sustaining of the costs necessary for the development of the production process. This activity is strongly influenced by biological and climatic risks that can determine the loss of production or an unsuitable quality level. Placing all the production on the market in a single moment and in a brief time is not always easy.

In economic terms and financial terms, the winery companies have a substantially stable trend in revenues, while the costs incurred to purchase wine show different times for the revenue and is linked to the completion of the upstream production process. In any case, for this activity the financial needs are generally limited, since the purchase-conservation-sale cycle tends to take place quickly.

There are different dynamics related to financial needs, where one must make a difference between structural financial needs and financial needs related to the performance of the operating cycle. For the agricultural phase, the financial needs related to the structure take on a significant weight; the land, the machinery and all the operations related to the plant and the development of a vineyard raise the items of expenditure of this category of investment until it reaches important levels compared to all the typical investments of a winery. The needs related to the development of the agricultural phase cycle are attributable to the costs incurred for obtaining the grape once the vineyard has been prepared. The incidence of these expenses is very variable because they depend on the type of production and the degree of mechanization of the company. The structural financial needs of the transformation phase concern the investments that are made in the cellar, made up of the set of plants, machinery and equipment that enable the vinification of grapes and the conservation of wine. The financial requirements related to the operating cycle of the transformation phase are linked to all the operations carried out in the cellar. The recovery times of these investments are very long, and the reasons are due to two constraints: biological constraint in the agricultural phase and biological constraint in the transformation phase. The biological constraint of the agricultural phase prevents obtaining the production of grapes to be introduced in the transformation phase, not before four years have passed since the planting of the vineyard; the biological constraint of the transformation phase requires processing times that can vary from several months to several years.