

# RISKS AND COMPETITIVENESS IN AGRICULTURE WITH EMPHASIS ON WINE SECTOR IN CROATIA

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**Abstract:** International competitiveness, being a key objective of each economic entity, is at the same time significantly determined by the level of risk the entity is coping. Based on the assumption that risk management is directly linked to competitiveness in agribusiness, the scope of this paper is predominantly focused on the wine agribusiness in Croatia. The aim of this paper is to encompass available literature and transfer findings to interested parties, about risks and competitiveness in agriculture, with particular reference to the wine sector. Qualitative analysis of secondary data, descriptive i.e. monographic method, deductive method and comparison of available papers from the world and Croatia were applied in the paper.

There are very few companies in general, however, that tend to use their abilities to manage risks as a source of competitive advantage. These companies go beyond compliance or cost-controlling defensive approaches and take a more aggressive stance toward risk. They have realized that their risk management capabilities can be leveraged as a source of competitive advantage (Elahi, 2013). Current literature showed that such companies indirectly exist within global agribusiness. Examples of such companies in the wine sector could be found in Old World and New World wine countries. In regards with the mentioned, further research in the wine sector that would more directly link competitiveness and risk management and benefits that could be drawn from such “linkage” is needed.

**Keywords:** Agriculture, Wine, Competitiveness, Risks, Croatia

## Introduction

In terms of the new Act on agriculture, the legislator has defined agriculture in terms of the strategic sector of the economy in Croatia, and has indicated that, as such, it is an integral part of other development strategies. As stated, among other objectives of agricultural policies are encouraging competitiveness of agriculture, inter alia through multi-purpose and technologically innovative production adaptable to climate, and technologically modernized food-processing industry (Official Gazette, 30/15).

International competitiveness, being the key objective of every economic entity, should be defined on both macroeconomic and microeconomic level. International competitiveness of a country is more than a national economy's aggregate comparative (relative) advantage (Korom and Sági, 2005). The OECD defines competitiveness as the ability to face competition successfully, to sell products that meet demand requirements and, at the same time, ensure profits over time or the aptitude to gain market shares, and most people agree that competitiveness is a relative concept which should be measured according to a benchmark (OECD, 2011, sec. source Latruffe, 2010).

Along with competitiveness, indispensable terms in literature are competitive advantage and comparative advantage.

Competitive advantage can be defined as “anything that a firm does especially well compared to rival firms”.

When a firm can do something that rival firms cannot do, or owns something that rival firms desire, that can represent a competitive advantage. (David, 2011).

Competitive companies could be described as the ones that are constantly improving their market position, that appreciate their core business and values, aspire to improve quality and perfect their products, organisation and other aspects of business, innovate, grow by merging and acquisitions, and invest in talents.

According to Neary (2002), comparative advantage always determines the direction of trade. A more simplified definition is offered by [www.differencebetween.com](http://www.differencebetween.com), where comparative advantage explains how a firm may benefit because of the lower opportunity cost it has from selecting one alternative over the other. On the other hand, competitive advantage explains how a company may benefit by having a distinctive advantage over its rivals allowing them to produce at a lower cost and improve profitability.

Nowadays it is almost unrealistic to comment on competitiveness without mentioning risks. All the success factors and threats can also be potentially sources of risk, especially in agriculture.

There are very few companies, however, who tend to use their abilities to manage risks as a source of competitive advantage. These companies go beyond compliance or cost-controlling defensive approaches and take a more aggressive stance toward risk. They have realized that their risk

management capabilities can be leveraged as a source of competitive advantage. There are four major ways that a company can turn its risk management capabilities into a source of competitive advantage: keep serving when others cannot, seeking riskier businesses, excelling in everyday performance, and building a resilient image (Elahi, 2013).

A number of authors in their papers talk about types of risk in agriculture, among others Hardaker et al. (1997, 2002), Richardson et al. (1997), Harwood et al. (1999). According to Miller (2004), risks faced by agriculture have often been classified into such categories as production, marketing, financial, legal and human risks. An alternative and possibly more useful taxonomy is to categorise risk as either operational risk or strategic risk. The Agriculture Risk Management Team (ARMT) of the World Bank (2011) recognised the following risks: weather risks, biological risks, price risks, labour and health risks, and policy and political risks.

Very similarly, Jaffee et al. (2010) recognises major risks facing agricultural supply chains: weather-related risks, natural disasters (including extreme weather events), biological and environmental risks, market-related risks, logistical and infrastructural risks, management and operational risks, public policy and institutional risks and political risks.

Other than risk identification on a scientific level, risk management and risk management tools have been noted throughout the expert and institutional segment of agriculture: FAO (2008, 2013), European Commission (2001, 2005), United States Department of Agriculture (2013), World Bank (2005, 2010, 2011).

According to the United States Department of Agriculture, O'Donoghue (2013), farmers have many options for managing the risks they face and most producers use a combination of strategies and tools. Some strategies deal with only one kind of risk, while others address multiple risks. Following are some of more widely used strategies: enterprise diversification, financial leverage, vertical integration, contracting, hedging, liquidity, crop yield insurance, crop revenue and household off-farm employment or investment.

Based on the assumption that risk management is directly linked to competitiveness in agribusiness, the aim of this paper is to encompass available literature and transfer findings to interested parties about competitiveness and risks in agriculture, with reference to the wine sector. The reason for analyzing wine sector is its affiliation to highly competitive industry.

## Materials and Methods

The material includes an overview of the available recent literature on competitiveness and the use of risk management tools in agribusiness.

The paper is divided into four parts: competitiveness in agriculture, competitiveness of the wine sector, risks in agriculture, and risks in wine sector. Where possible, literature was considered from a theoretical and an empirical point.

Qualitative analysis and descriptive synthesis method of research papers for agriculture and wine sector in Europe and

world have been used in this paper, with reference to research papers in Croatia.

## Results

### *Competitiveness in Agriculture*

Competitiveness of the agricultural sector (in terms of farm or commodity competitiveness) has so far been investigated more frequently than that of the agri-food sector. Existing literature has focused mostly on price or cost competitiveness. The non-price component of firms' or farms' competitiveness is usually forgotten, although several authors stress it is an important aspect in gaining market share and sustaining profits. Finally, the issue of government intervention could be given more attention in the context of trade negotiations and agricultural policy reforms. (Latruffe, 2010).

In their study, Korom and Sági (2005) highlighted some financial indicators that could fit measuring the performance and competitiveness of agricultural enterprises in Hungary. Liquidity, working capital, turnover of assets, capital structure, debt repayment, productivity and profitability have been considered in the scope of their study. Given the importance of profitability, there is all the more need to better understand the components of competitiveness, and their impact on the economy, especially on agriculture. In the discussion of their paper, Korom and Sagi (2005) cited a number of authors. Among these are Bureau and Butault, (1992) who indicated that in agriculture, competitiveness is seriously determined by the input prices and by the subsidies. Korom and Sagi also cited Erdész et al. (2002), who indicated that within regional integration, the competitiveness of the agriculture is affected by indicators mainly associated with innovations, financial resources, productivity, vertical coordination, subsidies and market regulation. They can be supplemented by marketing, information and integration techniques.

Besides financial indicators, competitiveness (in horticulture) can be sustained and enhanced by taking care of the environmental and food safety standards. The example is Yercan and Isikli's paper on competitiveness in Turkish horticultural sector (2006).

In addition, legal environment could impact competitiveness.

According to Menghi et al., within the EU the efficiency of the solutions selected to conform to obligations imposed by laws can potentially impact competitiveness. This occurs both at farm and sector level and may also create differences amongst regions. Menghi et al. (2011), by quoting Henson and Casswell (1999), describe these effects with respect to food safety regulations, and how the latter can be strategically beneficial for farms and firms. Costs will differ according to efficiency in compliance and depending on firm size, existing standards of operation, and cost structure. A second type of benefit is linked to trends in consumer demand. The focus of consumers in agricultural and food markets can shift from price-based to quality-based competition.

Agriculture in Croatia following its independence shows an increase in utilised area, but production is still below pre-

war levels and the results with unsteady and modest value. Harmonization with Common Agricultural Policy (CAP) standards is slow; big steps have been made in establishing new institutions in agriculture and preparing adequate legislative framework, so there are no significant formal differences between the Croatian and European agricultural policy. However, European agricultural policy models are causing problems. There is a daily debate about the low degree of self-sufficiency of domestic production, low competitiveness and uncontrolled import of farm products. Farmers still often expect the government to organise the production and guarantee purchase prices as those in the former, socialist system (Franić, Mikuš, 2013).

### *Competitiveness of Wine Sector*

To be successful in current global wine trade, Old and New World locations need to create a unique bundle of product characteristics that add value to consumers. Successful Old World producers provide an example of constant improvement of product performance, create appropriate logistics in retail distribution channels, and create a symbolic appeal for its products. Successful New World producers engage in more consumer-oriented approaches to tactical decisions (varietal selections, market-oriented innovations and updating tastes that appeal to young and informal audiences), and understand the growing role of media or key opinion makers. The super-premium wine producers in this study attempted to integrate these concepts where possible but found limitations based on firm size and availability of human knowledge specificity. Therefore, an implication of the findings in this study is the issue of getting others on board to create a more collective effort and benefits (Harrington and Ottenbacher, 2008).

Alonso et al. (2014), in the findings of their research, point out that diversifying and entering new markets, especially due to domestic competition are respondents' main reasons for embarking in exports, while unfavourable currency exchange, issues of trust, or entry barriers are key challenges many of them face. Their preliminary study investigates a group of predominantly micro, small, and medium wineries from both New and Old Worlds of wine. Furthermore, despite the relatively limited wine production of most participating wineries, respondents perceive a necessity to be present internationally. Indeed, rather than fitting into a specific business model/cycle, the current complex business environment is triggering export strategies among entrepreneurs.

The general aim of the study conducted by COGEA S.R.L. (2014) was to provide background knowledge on key factors and mechanisms behind the development of competitiveness of European wines, and to assess how to further improve it both inside the EU market and in main third country markets vis-à-vis the competition from wine-producing third countries. Also the study is well connected to risk.

The following problem-areas were identified: 1. market access; 2. decision-making process of economic actors; 3. product adaptation to markets.

1. Market access: the (widely shared) expectation of increase in the turbulence on the international wine market leads to the first issue, that of market access. All types of initiatives (policy, strategic and operational) aimed at facilitating market access generate competitive advantage.
  - a. The first strategic level is the extension of the "market-portfolio". Expansion to new markets or to non-traditional markets (e.g. Republic of Korea, Algeria, Philippines, Mexico, etc.) would have a three-fold purpose: to reduce the risk associated with sudden economic changes and resulting from implementation of competitive strategies by competitors on their traditional markets, particularly in mature markets; to counter the expansion strategies of some New World Countries (in particular, Chile and Australia), notably in new markets; to ensure presence (with the highest possible relative market share) in markets where wine is at the introduction or development stage of its life cycle. High market shares and strong growth prospects (though expectations would not be for huge volumes) are likely to generate increasing returns on investments.
  - b. The second level is political-institutional and concerns the signing of bilateral preferential trade agreements with third consumer countries, also (but not only) with a view to expanding the market portfolio.
  - c. The third level is access to distribution channels, and therefore it regards influential key factors of competitiveness for which action may be to some extent stimulated by the public authority.
  - d. The fourth level regards wine businesses cost structure and the possibility to grant higher margins to distributors. This directly leads to the possibility (in some markets, and only for wines positioned in the Super and Ultra premium segments) to transfer wine in flexitanks and to relocate bottling operations in the consumption markets.
2. The decision-making process of economic actors: the analysis suggests that in the future wine demand will probably be more complex and sophisticated than at present in the various country-markets, and that increased market turbulence will lead to more intense rivalry between producers of wines of different origins. The ability of European wine businesses to react and adapt to changes in the competitive environment foreseeable to the horizon 2025 also entails an improvement of the conditions that facilitate the decision-making process of the actors.
3. Product adaptation to markets: this problem-area leads directly to the issue of strategic decisions concerning the product on the different markets. In turn, this involves different and politically sensitive aspects.

Using a cluster approach, Rebelo and Caldas (2011) in their paper present the case of the most important Portuguese wine region, the Demarcated Douro Region (DDR), which is a strong reference of terroir and known for producing Port wine. To increase its competitiveness in the world wine market, the DDR needs to evolve from an organised to an innovative cluster.

Cetrángolo et al. (2007) analyse the Argentinean wine industrial environment in relation to the characteristics of the United Kingdom quality wine market. Authors suggest that according to the performed investigation, it is possible to describe each determinant of the Porter's Diamond as follows:

- Conditions of the production factors: The Argentinean wine industry has high comparative advantages thanks to the very good agro-ecological conditions that are present in the producing regions and that allow to cultivate a great diversity of varieties with no or minimum use of agrochemicals, thus permitting to obtain high quality production at a low cost. The competitive advantages of the production factors are based on the presence of qualified human resources working in the sector, on the labour force that is cheaper than in competing countries and on the incorporation of hi-tech in all the links of the chain,
- Demand conditions: [...]The buyer's negotiating power plays an important role within the demand conditions, since the high concentration especially of the supermarket chains, the proliferation of distribution brands, the high degree of professionalism and the buyers' needs,
- Firm rivalry: The firm rivalry increased because of the high number of wineries going into business. Its importance might be reduced by identifying niches for the differentiation of products or by selling at the highest price range where the competition decreases,
- Related and supporting industries: The suppliers of technological services, especially enologists, agronomists and communication and marketing experts have strongly improved their performance in the conversion of the vineyards for the quality wine elaboration. In order to conclude the analysis of the industrial sector in relation to the UK quality wine market, it is important to underline that the high negotiating power of buyers is the main competitive force that must be resisted.

Tipples (2010) has explored the fragile link between a medium sized New Zealand wine business and a major overseas supermarket chain, and how a smaller business can survive market disappointments such as reduced supply contracts. Establishing a successful long-distance supply chain for a New Zealand wine does not guarantee long-term business success. When that success was threatened by the supermarket reducing its order unilaterally the company concerned responded by restructuring its business operations to overcome a performance gap. A further chain has been developed to another UK based supermarket chain, ASDA, to move bulk wine and significant inroads have been made into the US market place through Total Wine & More, a US distributor/retailer. Long-term relationships played key parts in all these developments. Establishing and maintaining customer contact and loyalty through regular interpersonal contact and close monitoring of the supply situation has had a central role.

Sustainability is becoming increasingly important in supply chains, particularly in those that function in highly competitive industries. The findings show that managers within the New

Zealand wine supply chains are trying to find ways to leverage sustainability-related competencies for competitive advantage in what is now a highly competitive industry. For this research, definition of sustainability is limited only to the environmental dimension (Flint and Golobic, 2009).

Taplin (2006) has examined the changing competitive landscape in the wine industry, focusing upon how premium Napa valley producers are responding to such changes. Wineries identify the growing concentration and consolidation amongst distributors and domestic US producers; increased foreign competition, particularly from Australia; and the trend towards homogenised taste following the increased power of numerical wine ranking surveys as principal concerns that they face.

### *Risks in Agriculture*

Good risk management involves anticipating potential problems and planning to reduce their detrimental effects. Simply reacting to unfavourable events after they occur is not good risk management (FAO, 2013). The goal of risk management policies is not to support income, but only to reduce fluctuations of income or its components. EU policies in the framework of the CAP (The Common Agricultural Policy) have a major impact on farmers risk, even if their main goal may be income stabilisation and not risk reduction (i.e. market intervention, direct payments, rural development measures providing incentives for on- and off-farm diversification) (European Commission, 2001).

According to Meuwissen et al. (2001), price and production risks are increasing and governments increasingly encourage agriculture to find private market solutions for catastrophic risks like floods and epidemic diseases. They concluded, on both theoretical and empirical grounds, that risk-sharing strategies do provide such opportunities. The empirical results are based on a questionnaire survey among Dutch livestock farmers. Having risk-sharing markets is important for improving the efficiency of the farm sector.

Székely and Pálinkás (2009) compared American and European Union (Germany, Hungary, Poland, Spain and the Netherlands) farmers' risk management practices based on various surveys. One of the most important findings of this study is that American farmers considered changes in agricultural politics as being more important than their EU counterparts, although price variability is a major factor for both American and European farmers. The study also revealed that hedging is far more popular among US farmers than with European ones. However, after viewing both the US and European participation in government programs and engaging in diversification are important risk management strategies both in the USA and in the EU. The study also indicates that the majority of both US and European agricultural producers avoid using debt for financing their operations and try to use other solutions like having cash reserves to solve financial challenges.

Benni and Finger (2013) investigated how agricultural policy reforms, including market liberalisation and market deregulation, have influenced gross revenue risk (Swiss dairy

producers, period 1990-2009). Prices were the main contributor to revenue risk, even if the importance of yield risk increased over time. Market liberalisation and market deregulation have reduced natural hedge at the farm level.

Having effective risk-sharing markets is important for improving the efficiency of the farm sector. Governments should be responsible for helping the formation of risk sharing markets. The key is to turn risks that have been previously considered non-diversifiable into diversifiable risks that can be spread around the world. Empirical part of the research was carried out in the town of Gaoyangdian in Pingyu County, Guandu in Zhongmu County and Daling in Zhengyang of Henan Province (Aimin, 2010).

The Deutsche Bank Research (2010) demonstrated that public policies always crowd out private risk management instruments. Moreover, they hinder the discovery of the natural market price, potentially preventing necessary adjustments to a changing market environment. An important role for public policy is, however, to empower farmers to take their own informed risk management decisions among a diversity of instruments and strategies.

Swenson (OECD, 2000) has indicated in his article that the evolution of the food chain from a competitive industry characterised by many participants at all levels to an increasingly integrated system provides a unique risk management opportunity to those who have market power. In the absence of effective intervention by public institutions, highly integrated firms are able to transfer the majority of unacceptable risk to the ends of the chain; in particular, to farmers, ranchers and retail consumers.

Whole-Farm Risk Models and Enterprise Risk Models in agriculture is subject of interest for a number of authors (Lien and Hardaker, 2001, Bewley et al., 2010; Reynolds et al., 2006).

In their study, Heyder et al. (2010), aimed at providing a better understanding of the management of price volatility in the agribusiness sector. The survey of German agribusiness companies shows that a clear majority of respondents perceive increased market volatility. All in all, the study reveals a remarkable gap between the wide spectrum of – sometimes highly developed – risk management instruments available and the, at least in many cases, comparatively simple risk management strategies (for instance long-term contracts with suppliers and customers) currently prevailing in the agribusiness sector.

Leat and Giha's (2013) paper examines one of Scotland's major pork supply chains to identify

the key risks and challenges involved in developing a resilient agri-food supply system, particularly with regard to primary product supply, and to show how risk management and collaboration amongst stakeholders can increase chain resilience. They suggest that reduced supply chain vulnerability to risks arose through horizontal collaboration amongst producers, and vertical collaboration with the processor and retailer. Producers improved market and price security, and pig performance. For the processor and retailer, the collaboration generated greater security of supply of an assured quality,

improved communication with suppliers, and reduced demand risk as they could assure consumers on quality, animal welfare and product provenance.

To minimize high levels of investment and risk inherent in their ventures, entrepreneurs developed an innovative organizational form: the New Generation Cooperative (NGC). This organizational form attracted many investors through the creation of investment incentives inaccessible to traditional forms of producer group action. After two well-publicized, profitable NGC ventures, farmers decided to pursue a similar strategy for several of the crops in their rotation. They joined together to identify opportunities to add value to a variety of their crops—primarily sugarbeets, corn, and soybeans. Examples are from Minnesota, USA (Burress et al., 2008).

The paper by Dorfmana and Karalija (2008) utilized a panel data of Georgia farmers (USA) to investigate the role of a variety of factors on the hedging (three major crops: corn, soybeans and cotton). Some of the conclusions are that habits play a quite significant role in hedging decision for many farmers, information source are powerful explainers of hedging decisions. Other important factors in farmer hedging decisions include attitude toward technology adoption, education levels, farm profitability and ratio of acres owned to acres farmed.

The focus of Angelucci and Conforti (2010) is on the value chain of stakeholders (fruits, vegetables and spices) in Small Island Developing States - part of African Caribbean Pacific country group. Results reveal limited ability to handle price and production variability due to lack of both horizontal and vertical coordination along value chains, reduced use of support services, notably credit and underinvestment in equipment. Promoting light forms of vertical and horizontal coordination, such as production contracts and producers associations, as well as value chain - based credit and finance may address some of the issues highlighted.

Matić et al (2010), in their paper, taking into account market risk for the observed companies in Croatia, concluded that most companies analyse risks using “the rule of thumb” or don't analysis market risk, because, as they believe, costs exceed the benefits. Pankretić (2011) in her diploma paper deals with risk analysis in cattle fattening in Croatia.

### *Risks in Wine Sector*

The aim of Duquesnois et al. (2010) paper was to investigate the competitive strategies adopted by French wine producing firms in a crisis context. The preferred strategic choice of the majority of investigated firms is the combination of “niche + differentiation” strategies. Viviani (2006) presented an original risk protection mechanism implemented by the federation of Cote du Rhone (Inter-Rhone) wine producers to build up a wine stock, or “reserve”, so as to protect their incomes against fluctuation in prices and production.

Gugić et al. (2008) deal with the viticulture/wine of Dalmatia sources of risk and risk management strategies. Among the highest-rated sources of risk by respondents are health care, climate impacts on production and the possibility of product placement. Relatively unimportant are score of

misappropriation of assets and products, changes in interest rates and repayment ability and environmental policy. As the most important strategies for managing risk in viticulture and wine production, respondents chose use of their own land, constant learning and information and irrigation.

For the Slavonia and Baranja region, Njavro et al. (2005) explore sources of risk and risk management at fruits and viticulture-wine farms. Among the highest rated risk are the health of family members, climate risks and market risks. Risk management strategies were investigated with respect to their importance and use. The following most important risk management strategies were selected: application of appropriate technology, continuous learning and production on their own land. Two-thirds of respondents do not use insurance and as the main reason, they state the amount of the insurance premium.

Njavro et al. (2009) have connected the analysis of risk and uncertainty with the influence of climate risk in order to establish an effective system of risk management in the wine sector and to develop and integrate innovative risk management strategies in business strategy. Njavro et al. (2005) considered on the basis of international experience, primarily from the European Union and the USA, that work on the development of the insurance sector in the direction of covering multiple sources of risk should be done. However, based on others' experiences, the development of agricultural insurance should be based on private initiative and be commercially acceptable and economically viable.

## Discussion

Starting from the assumption that the wine sector is a highly competitive industry, and the conducted studies, emphasis in elements of wine competitiveness is placed precisely on the producers' approach and 'behaviour' on the market (market access) and the relationships within the supply chain.

An indirect link between competitiveness and risk can be found in competitiveness in the wine sector.

A number of authors who deal with issues of competitiveness in wine, and it is possible to recognise the link between competitiveness and risk management strategies in the very content of their papers. Current literature showed that such companies indirectly exist within global agribusiness. Examples of such companies in the wine sector could be found in Old World and New World wine countries. In regards with the mentioned, further research in the wine sector that would more directly link competitiveness and risk management and benefits that could be drawn from such "linkage" is needed.

In the area of risk management, a number of authors and institutions emphasise the importance that policies, government programmes and public institutions have on risk management for farmers. Risks in agriculture are the subject of a range of exact studies. From the conducted studies, it can be concluded that farmers are mostly implementing a set of different strategies, both production and market strategies, independent of the type of agricultural production.

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