

UKRAINIAN WINE MARKET ANALYSIS AND EVALUATION  
OF MARKET POTENTIAL FOR A MICRO WINERY

by

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Date \_\_\_\_\_

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## LIST OF ABBREVIATIONS

**SSSU** State Statistical Service of Ukraine

**MP** Market Potential

**CAGR** Compound Annual Growth Rate

**YoY** Year-Over-Year

**UAH** Ukrainian Hryvnia

**DCF** Discounted Cashflow

**HHI** Herfindahl-Hirschman Index

**CI** Confidence Interval

**TVM** Time Value Money

## CHAPTER 1. INTRODUCTION

For the last few years, the wine industry has been showing growth in consumption (in liters) through over the globe comparing to beer and spirits, and Ukraine is not an exception. Even though the situation in Ukraine is unstable from economic, financial, health, and all other perspectives for the last years, the wine market shows development, amazing flexibility, and the ability to adapt. Moreover, there were some changes in the preferences and the law that created for Ukrainian business several opportunities as for new entrance as for those who are already running the business.

This paper will evaluate the wine market potential using econometrical and financial analysis for 4 years starting from 2016 to 2019 and create a forecast for 3 years starting from 2020 to 2022. To do so several questions should be answered as well as industry analysis should be made.

The main purpose of this work is to identify two points. The first is Ukrainian businesses can produce wine that could compete with imported goods as well as be part of the international market, and this is already happening. The second is to prove to the business persons that this market is interesting: has the potential to gain profits, to grow, to develop, etc.

One of the most important things to reach those two points is to ask the main research question and problem. The part with questions is quite obvious in terms of agricultural and alcohol areas that are: what type of the market it is? Monopoly? Oligopoly? Competitive market?; if it is competitive then what is the level of competition?; how the changes for the last 4 years affected the potential of the market?; how prices are different for imported and domestic wine?; what is the structure of sales?; what is the overall situation in the market?; is there any so-called “wine-fraud”

on the market?; etc. Basically, all these questions are leading to the main task of this paper, which is an estimation of the wine market potential, and the approach to reach this goal is the basic formula of market potential evaluation, which is the multiplication of some factors, wine fraud model, Concentration to understand the type of the market, and Herfindahl-Hirschman Index in the case when the market is competitive.

These are the questions for the work, and the motivation is simple. Apart from the significant changes in the field for the last 5-6 years from the regulatory view and some issues caused by strange climat for the last 3 years, it is interesting for me because of the existence of one more fact: this area of operation is what my family is doing for a living.



## CHAPTER 2. INDUSTRY OVERVIEW AND RELATED STUDIES

### 2.1. History of the wine industry in Ukraine

To understand the industry, we should understand its history. Unfortunately, in recent years, winemaking in Ukraine is losing its growth rate. Due to political and financial components that had a strong impact on both production and trade in the market. But it is not the first time when the Ukrainian wine industry faces a hit. The very first comes to the times of the collapse of the USSR. During that times inside the Ukrainian wine industry was a deterioration of the three major areas relations: production of the wine grape, primary processing plants (production of the mash), and wine bottling plants, which, primarily, had led to the reduction of the vineyard areas, and created the opportunity for the biggest plants and companies to dominate and “create” the rules of the game.

In the mid 90th, there was established a law that established a license for the wholesale sale of alcohol (including wine) for 250,000 UAH a year, later in 2007 this amount increased to 500,000 UAH, also this payment was dismissed in October 2018 for small wineries.<sup>1</sup>

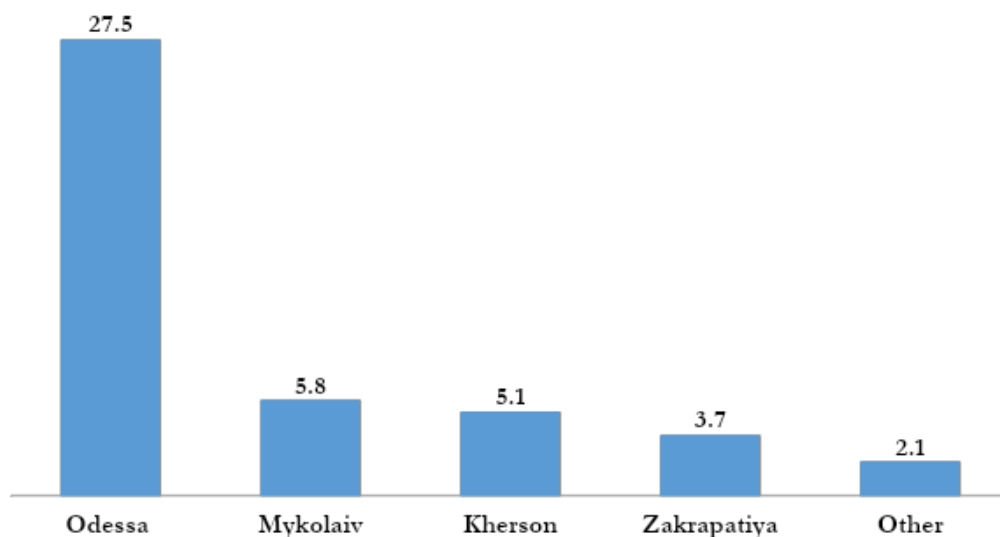
Besides this, there was governmental support for vineyards till 2015. Because just to plant the wine grape the business ought to pay 10,000 US dollars, and the nearest output will be in five years. This program was covering all production-related costs for the first three years after planting. Initially, the plan was to hold this kind of help until 2017, but unfortunately, it was terminated in the second half of 2015.

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<sup>1</sup> <https://zakon.rada.gov.ua/laws/show/481/95-%D0%B2%D1%80?lang=en> 1534-VIII

Also, in the same year, the total vineyard area was 44.2 thousand hectares (excluding 20 thousand, which were left in Crimea).

Figure 1. Vineyards area by regions



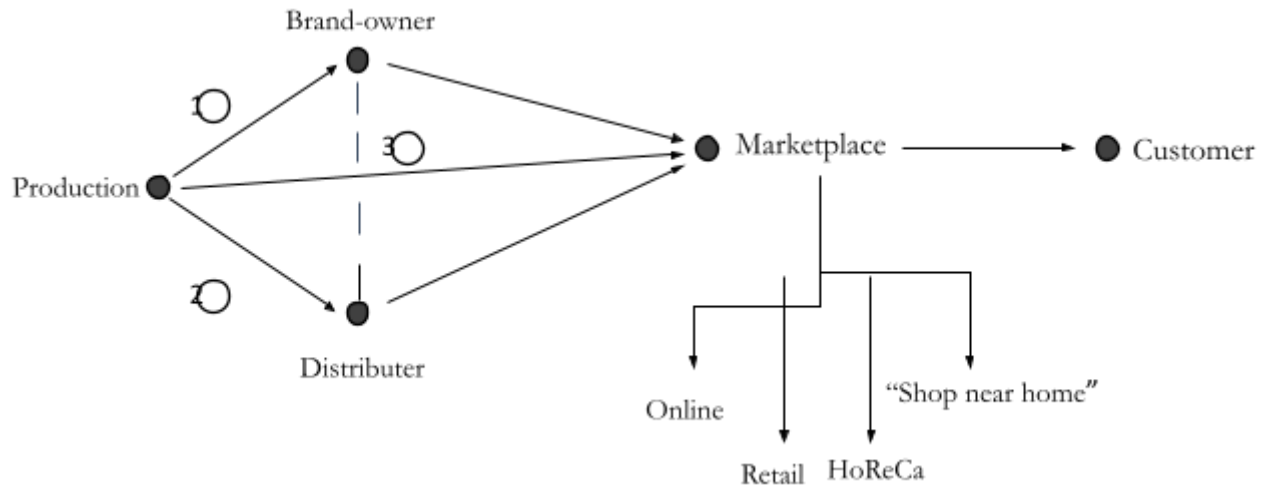
## 2.2. Current situation

By the end of 2018 in Ukraine, there are approximately 1,500 farms that cultivate grapes from which a little over 100 produce wine or wine material legally. There are approximately 20 different Ukrainian wine production companies, this creates strong competition. Although, the mentioned number of companies is after the separation of Crimea, before that the number was approximately twice more.

For now, there is a particular business model for the wine industry in Ukraine and the world and to understand it correctly there is a need to have a clear vision of the first stage, which is production. The whole process starts with **seed plots**. It is a facility or farm from which grape seedlings are coming. The second stage is **grape farms**,

where you get wine grapes. After that, the output goes to the primary production, and as a result, the company has a mash or wine material. The last stage is secondary production it is a process when from mash the wine is created.

Figure 2. Wine business model<sup>2</sup>

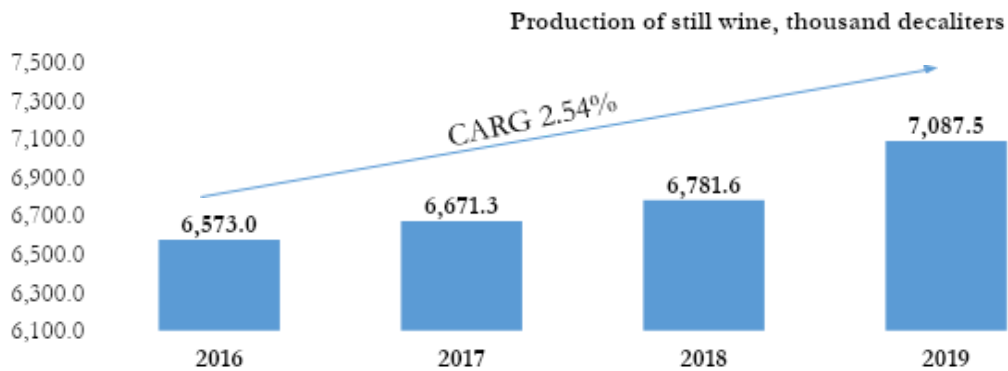


Therefore, there are three the most common options for the wine business to operate. First, it appears when the company has not had enough factories to produce all their goods, hence they find some producer, who is also called “Brand-owner”, who are working not at full capacity and agreed on cooperation on certain conditions. From there the final product goes to the marketplace that takes four different forms: online retail; big retail companies (e.g. Fozzy Group); HoReCa, which is translated as Hotels, Restaurants, and Cafes; small shops, markets, fairs near home. And finally, the customer gets the wine. Also, it should be mentioned that in this option there is another one possible step when the “Brand-owner” is going to the distributor. Second, it appears when a production company can produce all the needed amounts, therefore they go to the distributors, and from here the process is the same. The third, and the least common in Ukraine, is when the production company goes directly to the marketplace.

<sup>2</sup> Discussion with Anna Gorkun, owner and CEO at 46 Parallel Wine Group

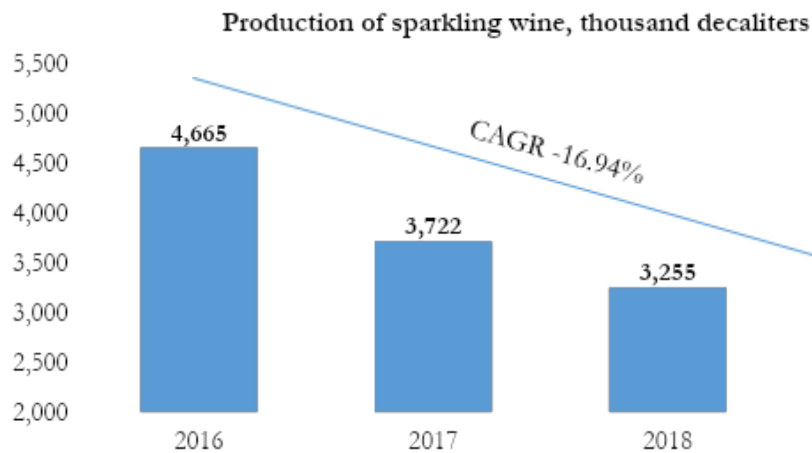
The next part is the production level on the market. The figure below shows that the overall production of still wine increasing for the last 4 years by 2.54% CAGR and in 2019, growth was 4.51% YoY. Basically, from the given data, it could be concluded that the production of still wines tends to grow.

Figure 3. Production of still wine, 2016-2019, th. decaliters



While sparkling wine faces difficulties. Because for the same period it showed a decline of 16.94% CAGR, and in 2019 17.86% YoY decline.

Figure 4. Production of sparkling wine, 2016-2019, th. decaliter



Although, by now Ukrainian wine market has one major problem in terms of production level is that the majority of the goods produced by the “big” companies,

and the figure proves this since approximately 80% of the total amount produced is made by the top 10 biggest production companies. And in the sparkling wine area, the situation is even tougher since more than 90% of the total amount of product is made by the top 10 biggest companies.

Figure 5. Top 10 Ukrainian still wine producers in 2019

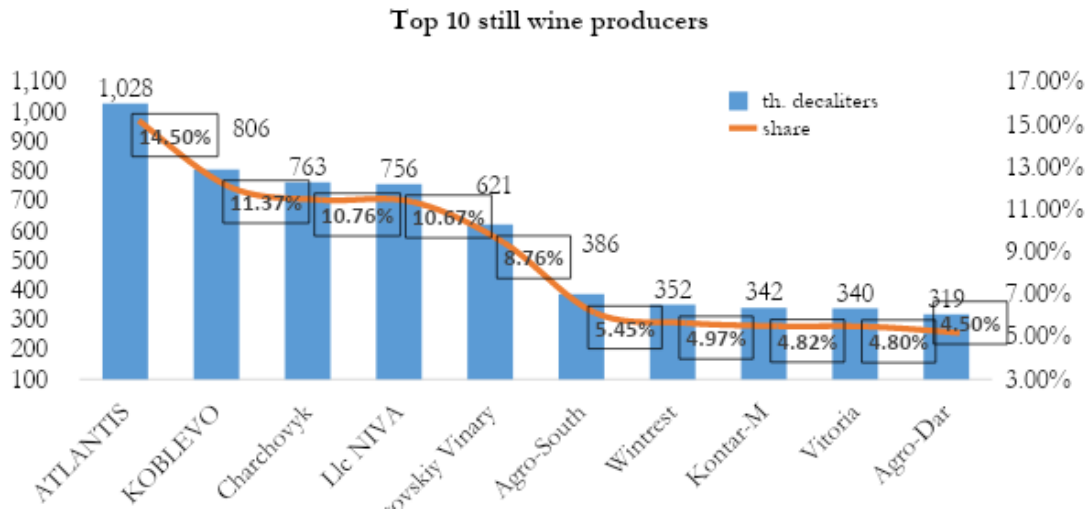
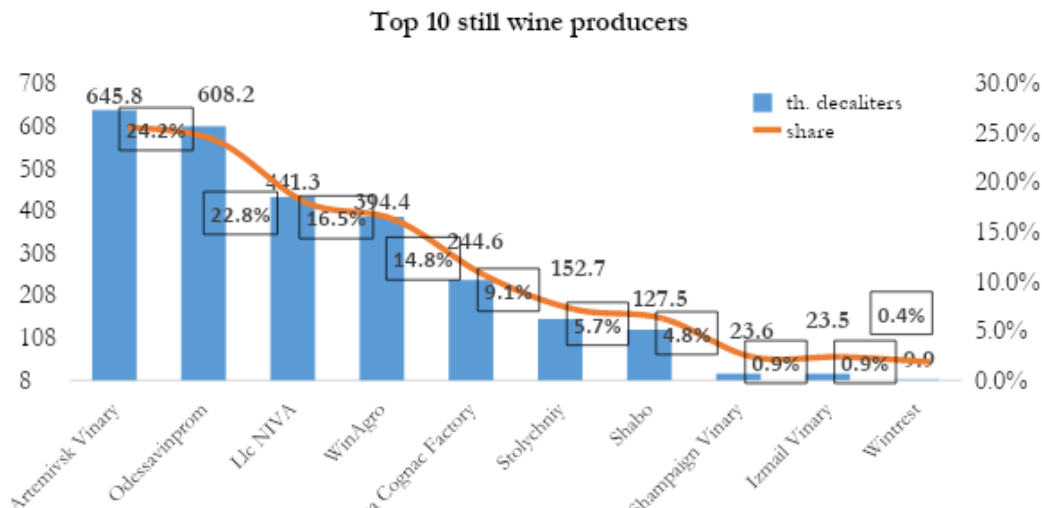


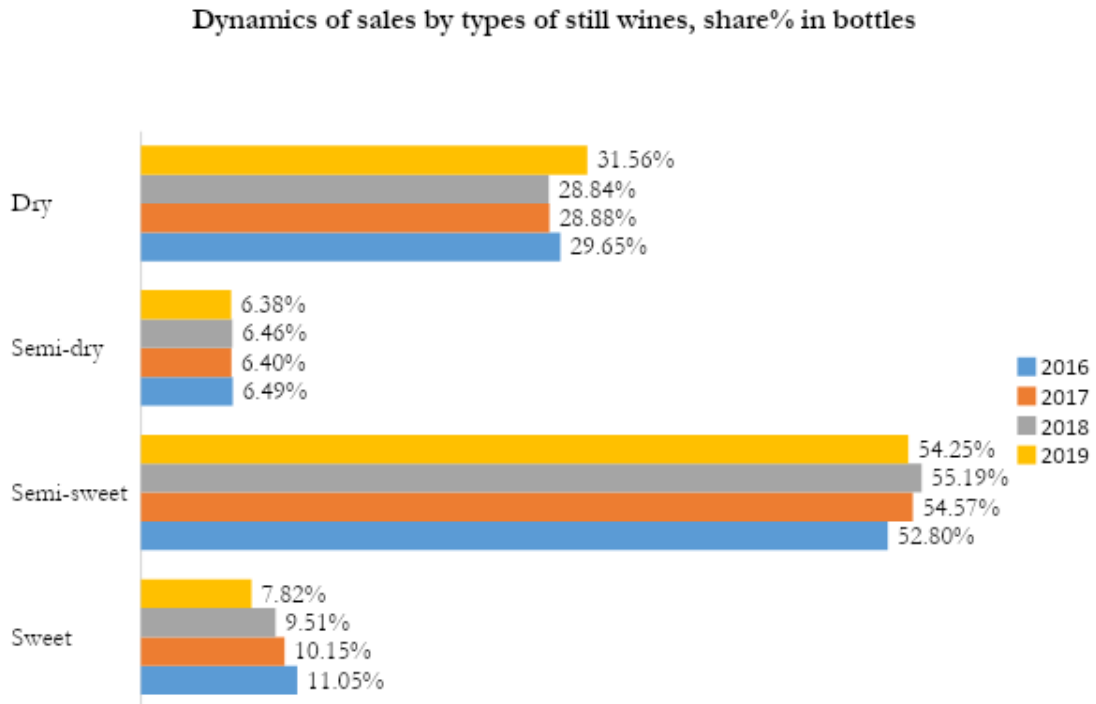
Figure 6. Top 10 sparkling wine producers on 2019



The other feature of the market is the dynamics of sales by the wine type. And following European trends, in 2019 the consumption of dry wines is growing, while the

share of consumption of semi-sweet wines of both Ukrainian and foreign production (due to the regional taste specificity of the country by product categories as a whole) remains significant.

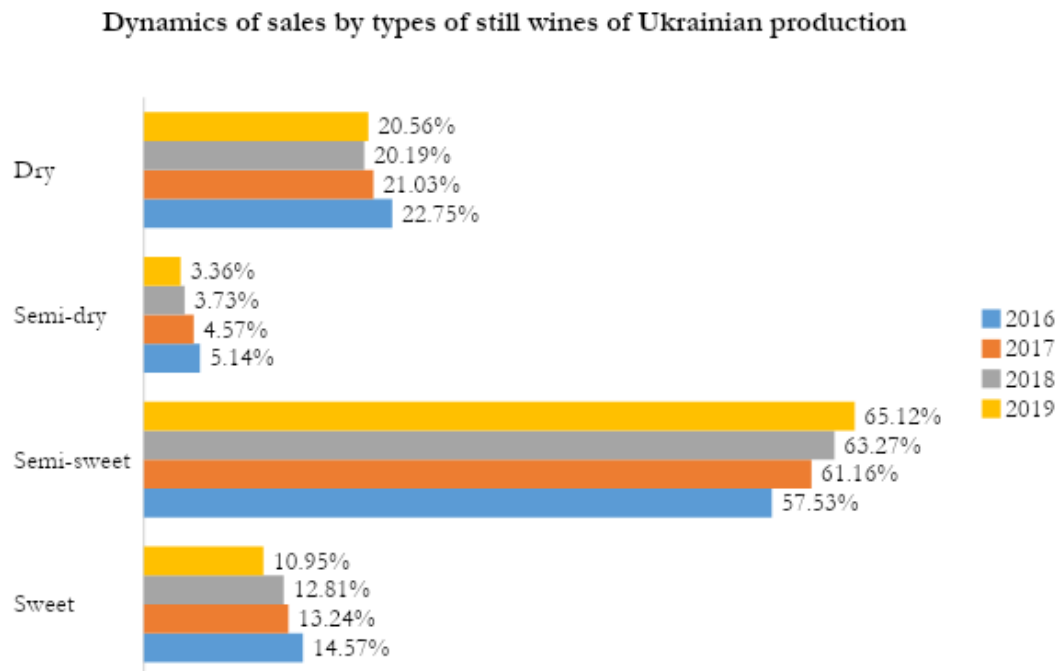
Figure 7. Total sales by types of still wines, 2016-2019, share %



It could be seen that as it was already mentioned sales of semi-sweet wine dominates in the market, also it had shown 3.6% growth, but at the same time, dry wines increased by 8.4% in the same period.

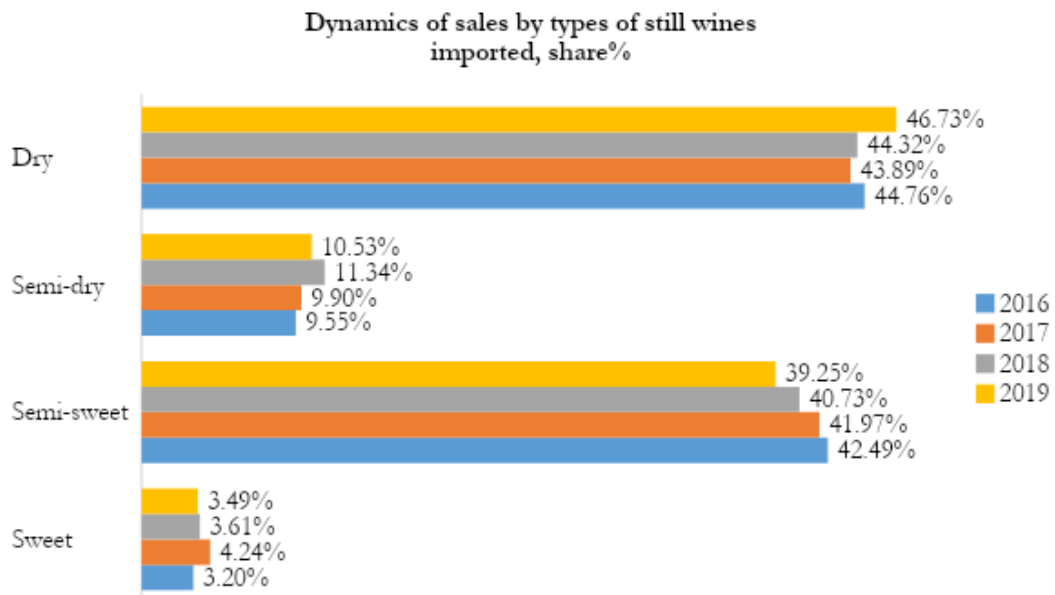
Overall, the semi-sweet wine dominates in the Ukrainian market and its realization by Ukrainian producers increased by 17.5% through the period of 2016-2019 with YoY 2.9% in 2019, while all others faced decreasing.

Figure 8. Dynamics of sales by types of still wines of Ukrainian production, % share



Although, the last period is interesting since not only semi-sweet wine indicated increasing but also dry wine by 1.8% YoY.

Figure 9. Dynamics of sales by types of still wines imported, % share

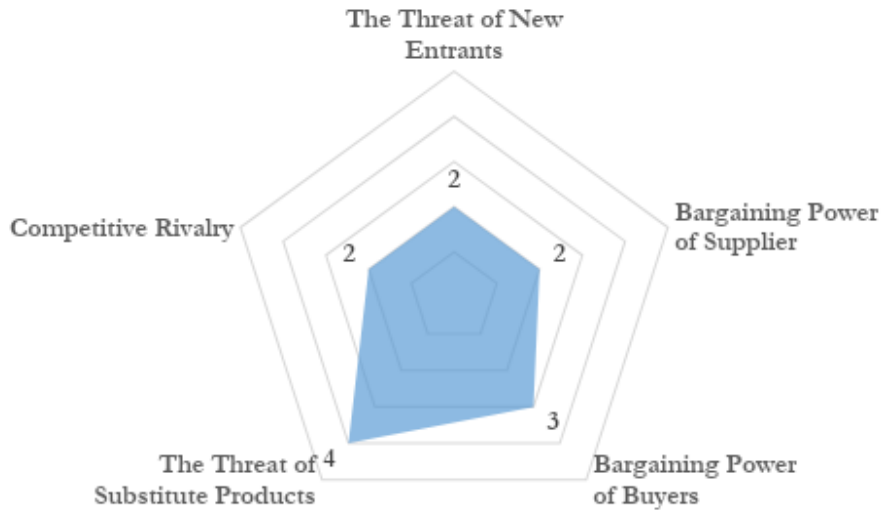


On the import side, the situation is different since dry wines are dominating there with a 5.8% growth through the period and 5.4% YoY in 2019

### 2.3. Porter Five Forces

The standard five forces analysis framework— consisting of competitive rivalry, the bargaining power of suppliers, the bargaining power of buyers, the threat of substitution, and the threat of entry—to summarize and identify results for the industry. Overall, 5 Forces of the wine industry in Ukraine lies in the middle “evaluation” of the framework.

Figure 10. Porter Five Forces Framework



### The Threat of New Entrants



In the wine industry threat of new entrants will be medium to low. It takes quite some upfront investments to start the vinery (approximately 1 Euro per liter of a tank farm, which means that for the farm with 40 wine grape hectares initial investment will be around 500,000 Euro), but it is highly connected with the expected volume produced. Although, newcomers need licenses, distribution channels, some grape farm as well, and this is the part where issues occur. Because to have a grape farm the business is ought to invest around 10 thousand dollars per hectare to have the grape and the nearest output is in 3-5 years, also the only help from the government is covering 60-80% of the costs for grape seeds, which is the lowest part from payment per hectare. Then business should get the license, to do so it should prepare documentation, and luckily from 2018, there is no payment for small wineries for the license (for others it costs 500,000 UAH). Moreover, when we are talking about Ukraine it can be expected that already existing players have built up experience, customer base, distributors channels, cut costing policies, etc.

### **Bargaining Power of Supplier**

In the wine industry bargaining power of suppliers is quite low. Because of their competition. Basically, there are a lot of them in the field and they provide companies with more or less the same service/product. Moreover, switching costs from one to another is low.

### **Bargaining Power of Buyers**

The bargaining power of buyers for the wine industry is scored in the middle because it has two sides: huge retailers and regular customers. On the one hand, supermarkets (“huge” or regional) in Ukraine convey around 60% of the national supply and have the ability to negotiate about prices and costs with producers. But their control on prices is still not as high as could be since they should offer a variety of wine, types, and prices to the final user. While on the other, customers here have a

different situation, they do not have any power over price, but they could easily switch from one producer to another with almost no costs. Also, nowadays they can check prices and quality of different wine companies fast through the many online price comparisons websites such as Vivino.

### The Threat of Substitute Products

The wine industry is facing strong substitute availability of spirits and beer. Retailers could easily switch from wine into, for instance, beer since the cost of such action is low and demand for beer is higher than for wine. Almost the same with pubs and cafes, but on the other hand industry have restaurants and hotels because of the cultural associations with wine.

### Competitive Rivalry

The rivalry force is considered as low to the middle in the wine market. Since the market is competitive, first of all, because, there is a lot of companies in the market, which produce approximately the same product and also it is supported with Concentration Ratio results, which says that is the top 4 companies gives less the 60% of the market share it is considered as a competitive market<sup>3</sup>.

Table 1. Concentration Ratio by types of wine, 2019

Semi-sweet		Sweet		Semi-dry		Dry	
Villa Krim	10.55%	Koblevo	2.84%	Inkerman	1.48%	Koblevo	2.49%
Koblevo	4.91%	PrimiumVinn	1.27%	Casaletto	0.58%	Villa Krim	2.07%
Tairovo	3.63%	Tairovo	1.08%	PRESTIGIUM	0.51%	Inkerman	1.65%
Good Year	2.98%	Euro-Alco	0.56%	Kartuli Vazi	0.31%	Kartuli Vazi	0.81%

<sup>3</sup> <https://www.investopedia.com/terms/c/concentrationratio.asp>

22.07 %	5.75 %	2.89 %	7.03 %
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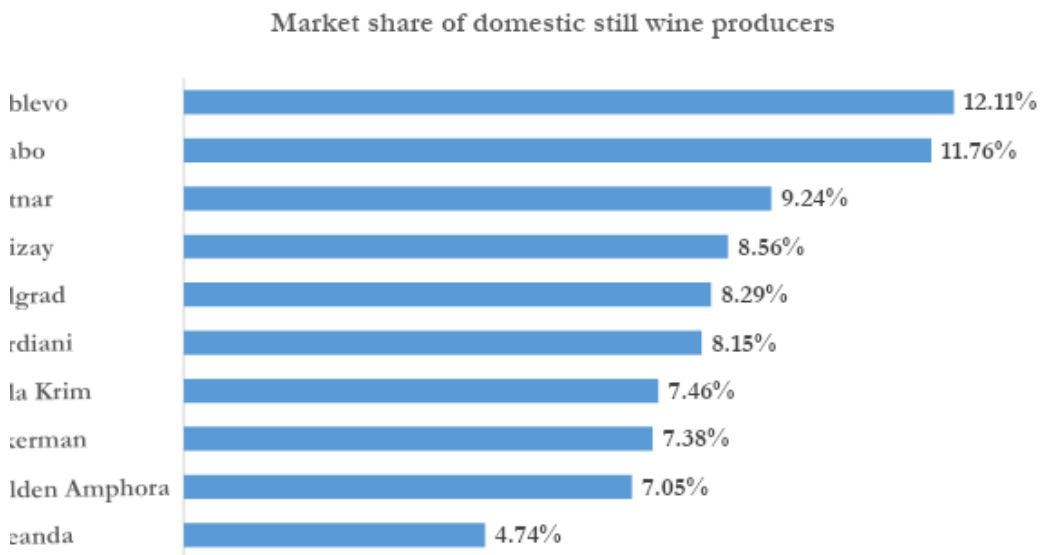
At the same time, the level of it is quite low, and this is supported by the HHI calculations for the industry, since if the HHI is lower than 1,500 the market is considered to have a low level of competition.

Table 2. HHI by types of wine, 2019

Wine Type	HHI
Semi-sweet	192.28
Sweet	11.41
Dry	19.92
Semi-dry	3.28

And last but not least, almost no switching costs, ease of access to quality, access to the information about the wine (its comments, area of production, reviews, etc.).

Figure 11. Market share of domestic still wine producers, 2019, %



## 2.4. Related studies

Although, this kind of analysis was already held by some organizations. The first one is the InVenture. Their team produced an industry analysis for the Ukrainian and World markets at the beginning of 2015. The data they had gathered contained information about vineyards areas in Ukraine and the world by the end of 2014 and changes through the 2011-2014 period. Also, figures and values for all wine production stages as well as information about realization. <sup>4</sup>

The next is the analysis that was gathered by the Drinks+ team. Their goal was to perform the same analysis that was by InVenture plus some production and sales forecast for the industry. <sup>5</sup>It was made by the end of 2016 and the forecasted period is two years. And the last major paper was conducted by 46 Parallel Wine Group, who is a member of the INKERMAN team that tried to evaluate the potential of the wine market for their new product to enter. By the way, it is the most recent analysis of this topic, since their work was introduced at the WineHub meeting on the 2<sup>nd</sup> of February 2020. <sup>6</sup> And the last will be the Pro-consulting team that was doing pretty the same work annually starting from 2014 till 2019.<sup>7</sup>

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<sup>4</sup> [https://inventure.com.ua/analytics/investments/obzor\\_rynka\\_vina\\_ukrainy](https://inventure.com.ua/analytics/investments/obzor_rynka_vina_ukrainy)

<sup>5</sup> <https://drinks.ua/news/proizvodstvo-vina-v-ukraine-2009-2017-progno/>

<sup>6</sup> <https://drinks.ua/news/koordinaty-ukrainy-na-karte-mira-46-parallel/>

<sup>7</sup> <https://pro-consulting.ua/ua/issledovanie-rynka>

### CHAPTER 3. METHODOLOGY

As one of the main goals of the paper is to evaluate the potential of the domestic wine market in Ukraine, various steps should be made. First, of all the market potential should be defined. Therefore, Market Potential (or MP) is the number of potential buyers, an average selling price, and an estimate of usage for a specific period. Hence the formula takes a simple form:

$$\mathbf{MP} = N \times MS \times P \times Q \quad \mathbf{(1)}$$

MP – market potential

N – total number of potential consumers

MS – market share

P – average selling price

Q – average annual consumption

For the formula (1) work properly several steps should be done. The first is to define the market segment and market size. The target market is generally described using a demographic and psychographic variable: gender, age, education, etc. While, the market size is wide, so it is every person who achieved the drinking age. The most important thing for this step is to identify how many potential clients fit the targeting market and in the case of the wine, the world “standard” group, are those from 18 to 65. Hence, this step gives access to the first part of the estimation: the total number of potential consumers. Then the market share and the average selling price would be gathered from the market data as well as average annual consumption. Although, one more step should be made. Since MP is calculated for the future period the obtained figures should be discounted using the basic Discounted Cash Flow (or DCF) formula.

$$\mathbf{DCF} = \frac{PV}{(1+r)^n} \quad \mathbf{(2)}$$

PV – present value (or in this case obtained value)

r – discounted rate

n – number of the period

As in any industry, the wine industry has its dark side it is so-called “wine fraud”. It is when wines are adulterated, usually with the addition of cheaper products and sometimes with harmful chemicals and sweeteners, or is made in earlier stages by manipulating the output of the mash by adding the water or sugar. Although it should be mentioned that the technological process allows adding some water or sugar to the wine material (or mash) but not more than 8% of the output. This could be achieved by analyzing information about:

- The yield of the wine grape
- Production of the mash
- How much mash was used to produce wine spirits?
- How much mash were exported?
- How much mash was bottled-up?

Hence, out of that, the formula for the model is:

$$\text{Wine produced} = (Ha \times Grape \times Mash) - Wine\ spirits - Exp \quad (3)$$

The wine produced – is the real number of the produced wine

Ha – is the real amount of the wine grape fields in hectares

Grape – is the total output of the wine grape

Mash – total amount of the mash produced

Wine spirits – the amount of the mash that was used to produce cognac and strong wine

Exp – the amount of exported wine material

But the very first thing is to identify the real amount of wine grape in Ukraine in hectares, this is easily obtained by multiplying the amount of wine grape by so-called thinning, which basically the space between every bush and the next step is to use the formula above to get the real output of the wine in liters. Then, the result would be subtracted from the number that was reported to the SSSU and the achieved value of the wine fraud. Although, the model would be built with some assumptions. Since, the wine material could be stored the model will simulate 4 different situations: when there

was no stored wine material, when 10%, 20%, and 30% were stored in the previous period.

The logic behind is simple: technological requirements that say that from one hectare the farm could get from 6 up to 8 tons of the grape and out of the 1 kg of the wine grape there could be produced 60-65% of the mast, hence from 600 to 650 milliliters. Also, it is important to mention that the reason why wine spirits are extracted is that the formula above would give an overall mah produced, hence some part of it will be used to produce material for cognac and other wine grape goods. Therefore, the model will either prove or reject the hypothesis about the existence of wine fraud in the early stage of production.

## CHAPTER 4. DATA

The data comes from different sources. First of all, statistics provided by the SSSU from 2016 till 2019 about the output of industrial products by type and sales of industrial products by type for the periods and all numbers are in millions decalitre. These datasets provide the industry's summary. The main aimed information is the still and sparkling wine production level and distribution of the top Ukrainian producers. Although, it takes a crucial part in the wine fraud estimation model. It should be mentioned that SSSU datasets cover 90-95% of the whole Ukrainian market since 5-10% is in shadow.

The next part of the data was kindly provided by 46 Parallel Wine Group, which covers from 90% to 93% of the legal market depending on the year. It could be separated into 3 types. The first one is the realization dataset, it is information obtained from huge retail networks. Overall 30,724 observation with 13 variables, which are brand name, collection of the wine, SKU (it is what you see on the label on the shelf in the supermarket), number of bottles sold, total UAH collected for this bottle, the average price of this bottle, price segment, year, whether it is imported or domestic, and type of wine by the taste (sweet, semi-sweet, semi-dry, dry). The very first thing that could be seen is that in the average prices there are some outliers, and after removing them there were 26,149 observations left.

Table 3. Descriptive Statistics of the realization dataset

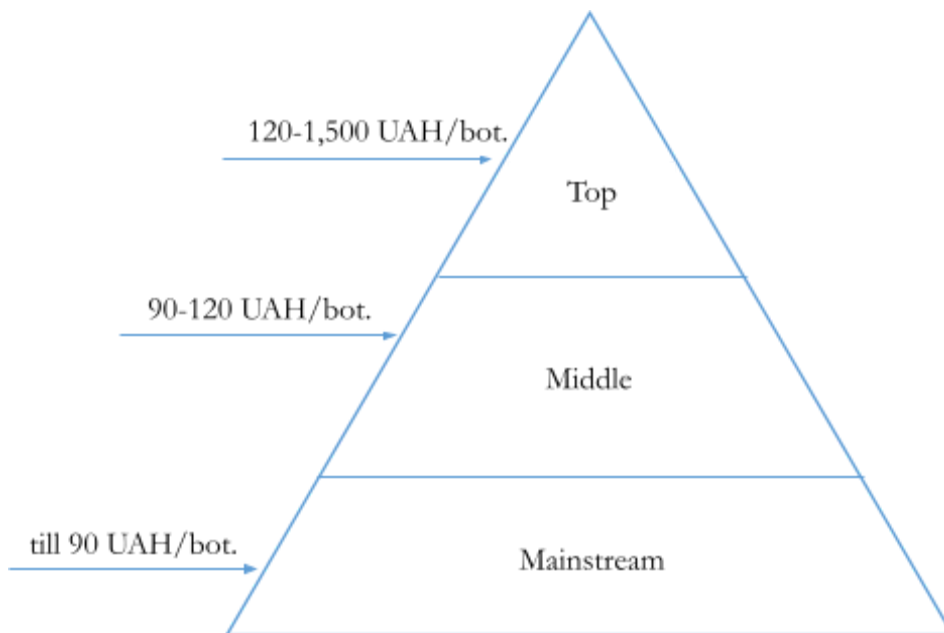
	<b>Average Price</b>	<b>Volume</b>
n	26,149	
mean	131.14	6,323.49
st. deviation	68.34	33,126.34
minimum	4.49	1.00
Q1	75.93	42.00
median	121.39	414.00
Q3	173.26	2,213.00



max	317.34	1,072,080.00
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Also, as shown in figure 9, there are three main price categories: mainstream (till 90 UAH per bottle), middle (90-120 UAH per bottle), and top (120-1,500 UAH per bottle).

Figure 12. Price segment pyramid

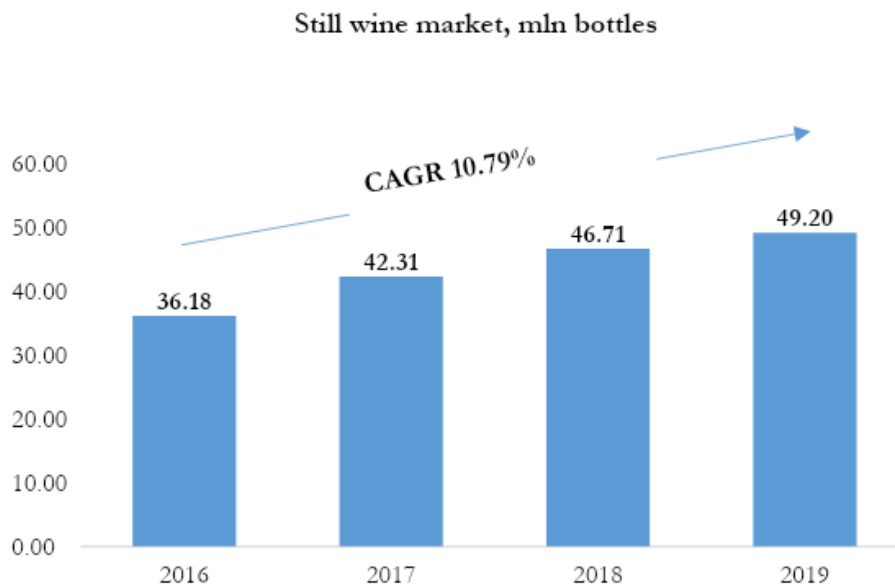


The second type is questionnaires that were collected by their team from 2017 till 2019 quarterly for still and sparkling wines. They are covering three major questions that are awareness, consumption of wine, and preferences for domestic wine using questions: Which domestic producer You know?; Wine of which Ukrainian producer had You drunk by the last 6 months?; Wines of what domestic producers do you drink most often?. Although, there was the question that identifying the factors that influence consumer's decisions, which was: What factors have the greatest impact on your choice of wine brand?. And at a result, two datasets were generated. The first, contain answers for the first three questions, and the second, answers for the last.

The third type, contain an overall summary of imported and domestically produced wine in the main retail networks that were gathered from 2016 to 2019 monthly. It has 5,258 observations for still wines and 1,024 for sparkling with two variables (number of bottles and share out of total).

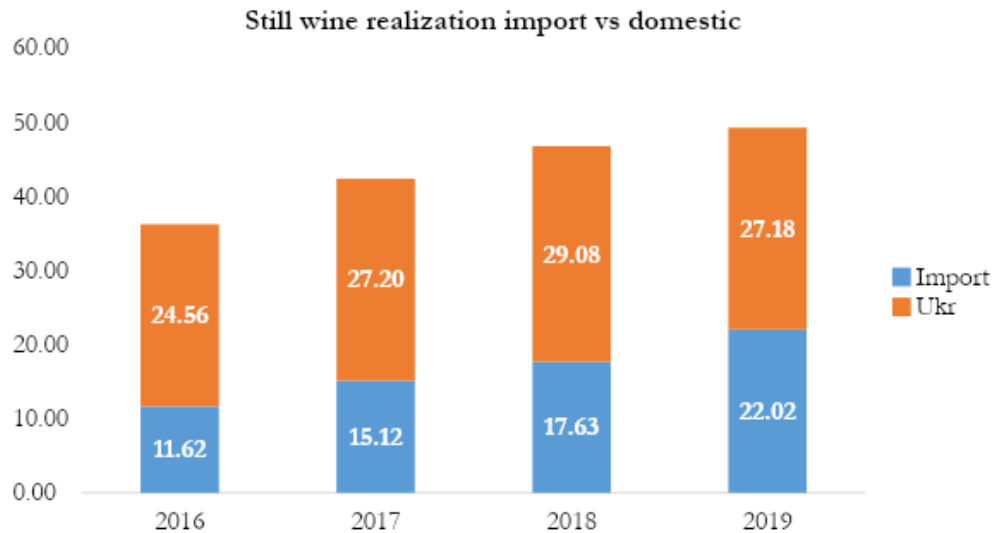
Using this dataset the clear vision of wine realization is obtained. Therefore, the realization of the still wines is increasing by 10.79% using CAGR. Also in 2019, this part of the market had a 5.3% increase YoY.

Figure 13. Realization of the still wines, 2016-2019, millions of bottles



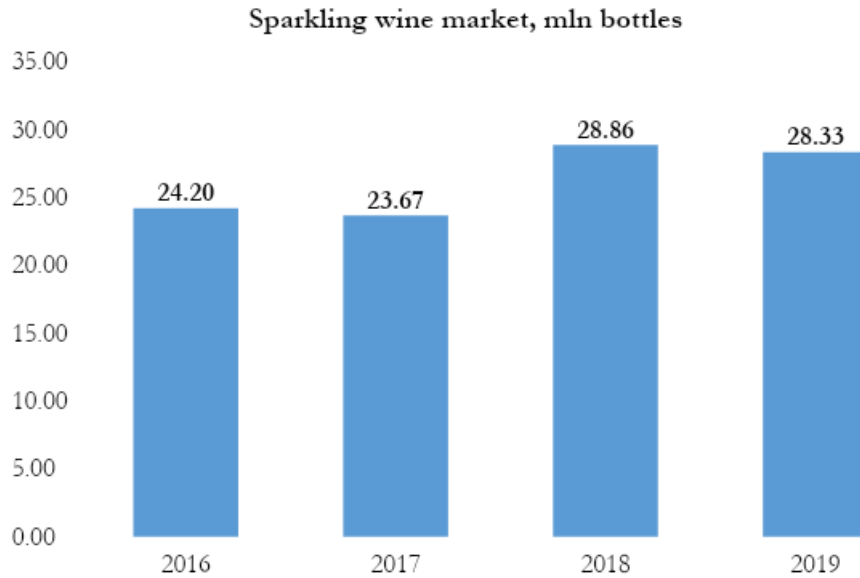
But, when looking detailed in the structure of the sales it could be obtained that in 2019 goods with imported origin had 25% YoY growth and 23.7% growth for the period from 2016 to 2019.

Figure 14. Structure of the still wine sales, 2016-2019, millions of bottles



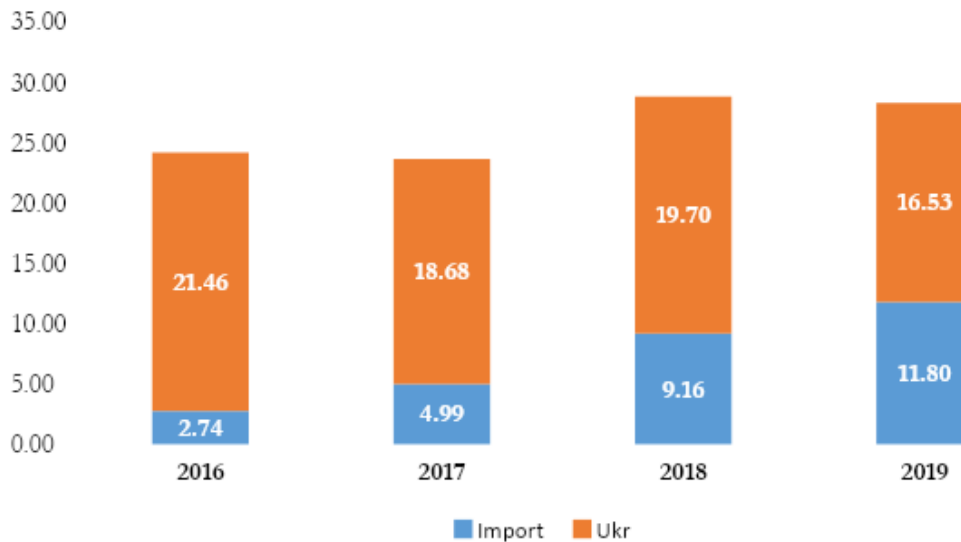
The situation with sparkling wine is approximately the same. For the same period, this part of the market has some fluctuations from 2016 to 2017 there was a decline in realization amount by 2.2%, but in the next period it had faced a significant increase by 21.93%, and at last, in 2019 there was a decline by 1.84% YoY.

Figure 15. Realization of the sparkling wines, 2016-2019, millions of bottles



In this case, the situation with imports is worse. For the period the market had faced an increase of 62.67%, and in 2019 there was a 28.79% YoY increase as well.

Figure 16. Structure of the sparkling wine sales, 2016-2019, millions of bottles  
**Sparkling wine realization import vs domestic**



Overall, while the possible reasons for such a structure for sparkling wine are more or less visible and understandable since as mentioned above production level decreasing for the last 4 years, but for still wine, the reason is still unclear.

And the last dataset was provided by the Bolgrad team. It contains the most crucial information for the wine fraud model and understanding of the production structure in Ukraine. Basically, it contains information about all grape connected alcohol goods production (still and sparkling, cognac, etc.) for 2019 and has part of 2020, from January to June.

## CHAPTER 5. RESULTS

### 5.1. Wine Fraud

Fraud is one of the major problems for any industry but for the wine market in Ukraine, it has reached a completely different scale. As mentioned above “wine fraud” is appeared in few cases. First, and the rarest, is so-called chemically produced wine, basically, it is a wine that was made without any grape, but as I have highlighted above is a really rare case. Second, is considered as the main fraud scheme, appears when a technological process for producing mash (known as wine material) is corrupted. In other words, for each type of wine the grape should have a certain amount of sugar inside, the scheme is pretty easy: if the level of sugar inside is lower then you need the producer to add a bit of water and some sugar or sweeteners or vice versa situation if it is higher then you need you to add a bigger amount of water and a bit of grape acid and sugar to stabilize the mash. It also should be mentioned that technologically it is possible and allowed to add water and sugar or sweeteners but if its amount not more than 8%. In the case of Ukraine, this percentage is much bigger.

Therefore, to evaluate this phenomenon some steps should be made. First of all, out of 44.2 thousand hectares, the wine grape fields should be separated. Also, we should understand that there is 25% of shrub thinning<sup>8</sup>. Hence, to obtain the real amount it is needed to multiple 30 thousand hectares, which is the amount of wine grape plantings, by 25%, and obtained 24 thousand hectares that are real amount of wine grape fields. Although the average technological output is 6-8 tons per hectare, in 2019 due to drought the average output was 4.5 tons, therefore, the total production level was low. The results are shown in the table below.

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<sup>8</sup> From words of the expert from Bolgrad team and PJSC “Prydunaiskiy”

Table 4. Real and possible wine grape output in 2019

<b>Ha, total</b>	<b>Thinning</b>	<b>Ha, real</b>	<b>Output per ha, kg</b>	<b>Output, total (grape) kg</b>
3000 0	25%	24,000.0 0	4,500.00	108,000,000.00
3000 0	25%	24,000.0 0	6,000.00	144,000,000.00
3000 0	25%	24,000.0 0	6,100.00	146,400,000.00
3000 0	25%	24,000.0 0	6,200.00	148,800,000.00
3000 0	25%	24,000.0 0	6,300.00	151,200,000.00
3000 0	25%	24,000.0 0	6,400.00	153,600,000.00
3000 0	25%	24,000.0 0	6,500.00	156,000,000.00
3000 0	25%	24,000.0 0	6,600.00	158,400,000.00
3000 0	25%	24,000.0 0	6,700.00	160,800,000.00
3000 0	25%	24,000.0 0	6,800.00	163,200,000.00
3000 0	25%	24,000.0 0	6,900.00	165,600,000.00
3000 0	25%	24,000.0 0	7,000.00	168,000,000.00
3000 0	25%	24,000.0 0	7,100.00	170,400,000.00
3000 0	25%	24,000.0 0	7,200.00	172,800,000.00
3000 0	25%	24,000.0 0	7,300.00	175,200,000.00
3000 0	25%	24,000.0 0	7,400.00	177,600,000.00
3000 0	25%	24,000.0 0	7,500.00	180,000,000.00
3000 0	25%	24,000.0 0	7,600.00	182,400,000.00
3000 0	25%	24,000.0 0	7,700.00	184,800,000.00
3000 0	25%	24,000.0 0	7,800.00	187,200,000.00
3000 0	25%	24,000.0 0	7,900.00	189,600,000.00

3000 0	25%	24,000.0 0	8,000.00	192,000,000.00
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We could see that the theoretical output is from 144 million kilograms to 192 million kilograms, while the real is 108 million kilograms. This clearly shows how damaging the drought could be since the production level of the real output is lower by 25% from the 6 tons per hectare level.

The next step was to multiply the obtained number by the range from 60% to 100% that is a technologically possible output of wine material, where from 60% to 65% is the most possible cases, from 65% to 67% are appearing only in really good conditions, up to 70% possible only in an ideal situation, and everything more is not possible at all, that numbers were added only to show the primary amount of fraud. As the result, it was obtained some total amount of the raw material, but it is important to know that a part of it is processed into wine spirits to produce cognac (24,225,543.75 liters<sup>9</sup> ) and some part is exported (23,671,000 liters<sup>10</sup> ), therefore to obtain wine material that is used only for wine production all of this should be subtracted from the total. Also, because there is a possibility that the wine material could be stored the model includes three more options whether it was 10%, 20%, or 30% stored in 2018, hence those values should be added to the real output of the wine. Therefore, the summarized results are shown in the figure below.

Figure 17. Wine fraud, 2019, %

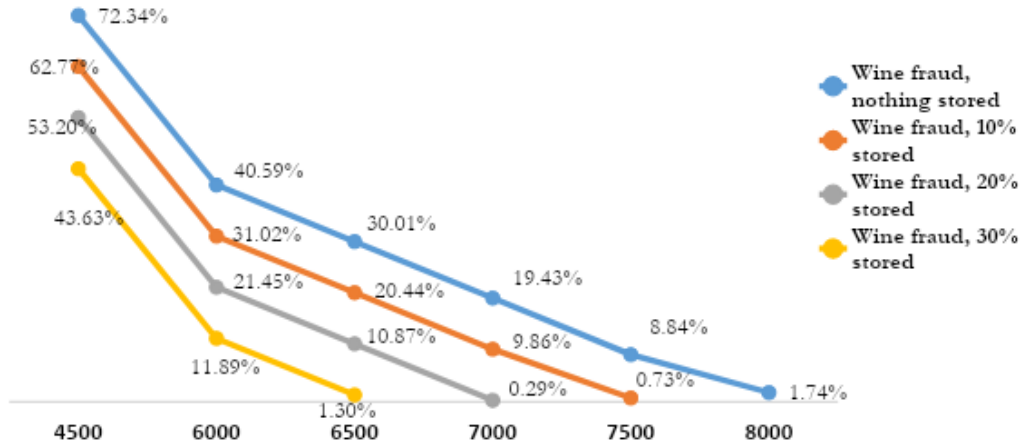
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<sup>9</sup> From Bolgrad team dataset

<sup>10</sup> [https://trade.ec.europa.eu/tradehelp/statistics##node\\_722](https://trade.ec.europa.eu/tradehelp/statistics##node_722)



**Wine fraud, 2019, %**



Hence, we could see that wine fraud in 2019 is on the level from approximately 72% to 44% depending on either was something stored in 2018 or not. Also, it should be mentioned that even in a “good year” the average output is from 6 to 7 tonnes per hectare, everything more is a rare case. But, it is clearly seen that the more industry is producing the less is the amount of wine fraud on the market.

## 5.2. Market Potential Assessment

Finally, the wine market potential assessment. First of all, it was calculated for a particular niche in the market: “boutique wine”. This is part of the market where mini wineries are operating (e.g. Kolonist, Trubetskoi, etc.). From the whole market, it is only from 9% to 10% but at the same time, this is the most interesting part of the market for new entries. Therefore, the model was made on the example of PJSC “Prydunaiskiy”, it is a small family company that obtained a license in September 2020. As was shown in formula (1) to do this, four characteristics will be needed: average selling price, the total number of potential customers, average annual consumption, and market share. Since

the market potential is calculated for future periods the forecast was made using 95% CI. As a potential customer, there were taken people from 18 to 65<sup>11</sup>.

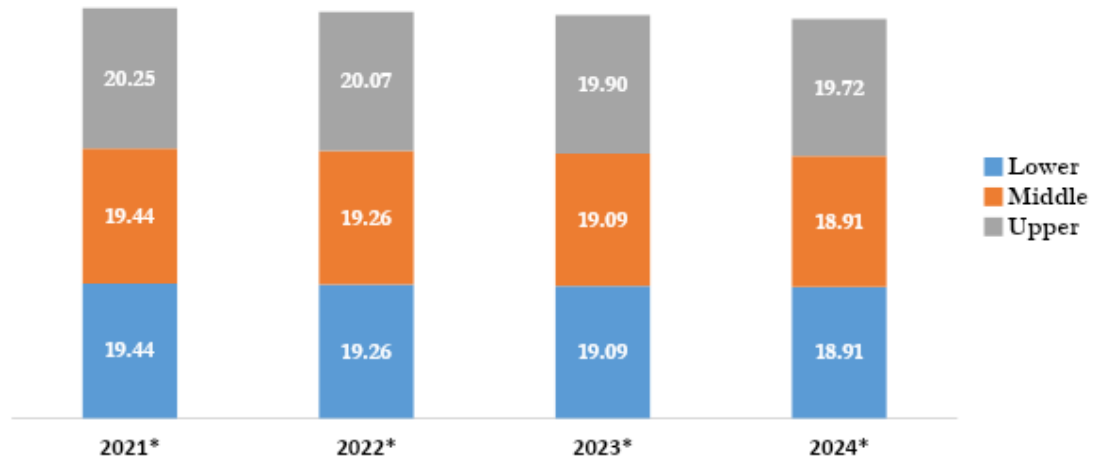
Since in Ukraine, the number of people is falling the number of potential customers follows this trend starting with a range of from 19.44 million people to 20.25 million people in 2021 end ending with the range of from 18.91 million to 19.72 million people. This information tells us that trend of decreasing in population is continued and it might not be sharp but Ukraine facing a steady decrease in population that could happen due to different reasons. For the wine market and the alcohol market as a whole, it indicates that sales volumes can, and most likely, will fall.

Figure 18. Potential customers, forecast 2021-2024, millions of people

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<sup>11</sup> <https://data.worldbank.org/indicator/SL.TLETOTL.IN>

### Number of potential customers, mln people



\*forecasted

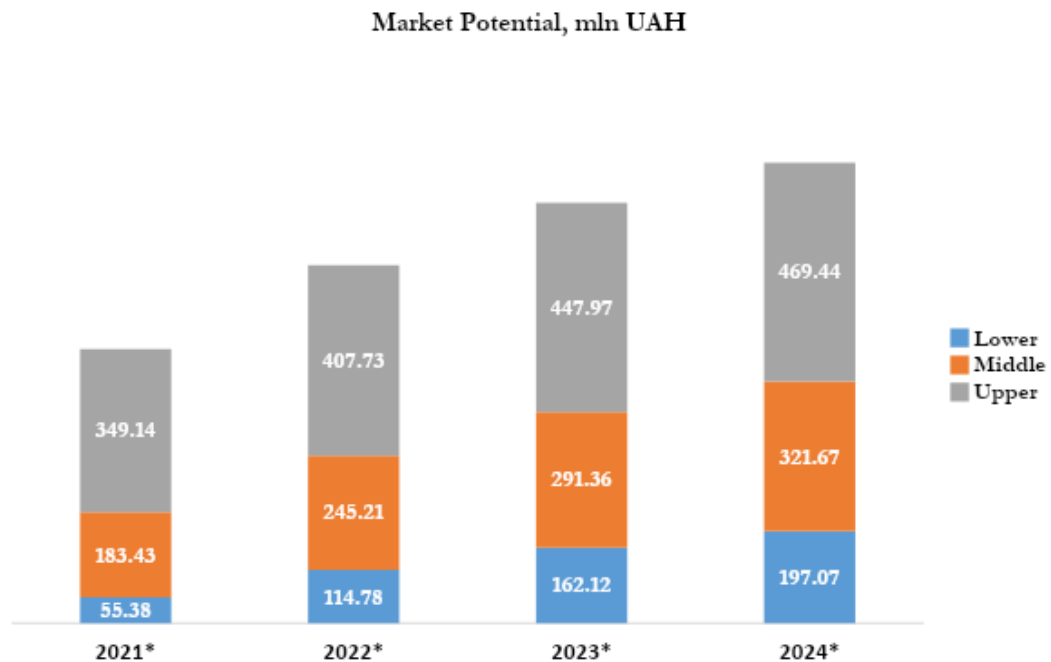
The average selling price was taken at the same level of 150 UAH per bottle but with an assumption that the production level is increasing from 100,000 bottles in 2021 to 250,000 bottles in 2024. To calculate the market share of the company first of all the production levels and market shares of the niche were estimated and then expected output was put into the modeled market and as the result, the market share range appears. Average consumption was forecasted in the same manner as potential customers

Table 5. Market share, 2021-2024, %

Year	Upper	Middle	Lower
2021*	5.15%	3.14%	1.13%
2022*	6.45%	4.44%	2.43%
2023*	7.59%	5.58%	3.57%
2024*	8.59%	6.58%	4.57%

Therefore, using formula (1) it was obtained that possible revenues for the company were obtained, but one more step was being made. Since there are TVM phenomena in the world, the result should be discounted, as a discount rate is taken at the level of the average share capital loan rate, which is 17.25%. So, after the DCF the results are starting from 55.38 million UAH to 197.07 million UAH in the worst modeled case and from 183.43 to 469.44 million UAH in the upper bound of the interval.

Figure 19. Market Potential Assessment, 2021-2024, millions UAH



\* forecasted

## CHAPTER 6. CONCLUSIONS AND RECOMMENDATIONS

### 6.1. Conclusion

Overall, the industry facing the fact that the number of imported goods slowly starting to dominate the market. This is happening for several reasons. The first is that currently in Ukraine there are a shortage of wine grapes and primary production goods (the wine material) and this is especially true when talking about the mash since as was shown in a previous chapter the amount of wine fraud is significant. Therefore, the quality of the wine material hence the wine becoming worse. Second, the domestic amount of goods sold reduced not only because of not fitting to the preferences but also due to existing of the so-called “Own Import”. This situation created additional pressure on the domestic producer and even more increased the entry barriers for small wineries.

But even though all of this is happening the niche part of the wine market could still face growth and be attractive for investments. As the model has shown it has amazing potential to gain profits.

### 6.2. Recommendations

Several things could be done to improve the situation on the market. The first is the different types of cooperation. For instance, some company A coming to the grape farm and saying that we will buy your grape by 12 UAH per kilogram, which is higher by 7 UAH of the market, but we will follow on the quality of the grape if it not fitting, unfortunately, our relations will be ended. This type of attitude might increase the wine grape producers to work truthfully since they will get profits and at the same time company A, which have the factories for primary and secondary production, will also work for profits since the quality of the grape is good, also by the same manner the quality of primary and secondary production is good as well, therefore we have a bottle

of wine that is at least as good as imported. The greatest example of such a model will be Kolonist since part of their wine grapes are produced in house, but part of it is bought. Moreover, such a cooperation pattern could be implied in all production stages.

The second is way more time consuming, and will only exist when the first thing working correctly, is governmental support. The best example of the success of such action is Spain. Approximately 10 years ago governmental support was introduced there, and not only on the secondary or primary production stages but also in seed plots, grape farms, and realization. For example, if you export a bottle of wine, from 3 to 5 euro cents will be returned to the business, or taxation subsidies for grape farms, and so on. As a result, Spain is one of the largest exporters of wine material in the world and achieved the fame of the good wine producers for the taste, quality, and price of their wines. Also, the system of quality control could be implemented. By this, I mean that it is possible to monitor compliance with the technological process during all production and create some kind of fines system. It is also true that wine fraud will not completely disappear, but it will not be from 72% to 44%.

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APPENDIX B

Table 6. Concentration Ratio by types of wine, 2018

Semi-sweet		Sweet		Semi-dry		Dry	
Villa Krim	10.49%	Koblevo	3.75 %	Inkerman	1.79 %	Villa Krim	2.32 %
Koblevo	6.57%	Tairovo	1.41 %	PRESTIGIU M	0.49 %	Koblevo	2.15 %
Inkerman	3.32%	PremiumVin	1.17 %	Vicente Gandia	0.48 %	Inkerman	2.10 %
Bolgrad	3.20%	Euro-Alco	0.51 %	Casaleto	0.42 %	Fratelli	0.86 %
	<b>23.57 %</b>		<b>6.83 %</b>		<b>3.18 %</b>		<b>7.43 %</b>

Table 7. Concentration Ratio by types of wine, 2017

Semi-sweet		Sweet		Semi-dry		Dry	
Villa Krim	8.29%	Koblevo	3.80 %	Inkerman	2.25 %	Inkerman	2.63 %
Koblevo	7.89%	PremiumVin	0.87 %	PRESTIGIU M	0.40 %	Koblevo	2.04 %
Inkerman	6.05%	Vinlux	0.84 %	Casaleto	0.33 %	Villa Krim	1.81 %
Bolgrad	5.14%	Euro-Alco	0.69 %	Dellisimo	0.24 %	Bolgrad	1.22 %
	<b>27.37 %</b>		<b>6.21 %</b>		<b>3.22 %</b>		<b>7.71 %</b>

Table 8. Concentration Ratio by types of wine, 2016

Semi-sweet		Sweet		Semi-dry		Dry	
Koblevo	9.81%	Koblevo	4.20 %	Inkerman	2.58 %	Koblevo	3.09 %
Inkerman	7.57%	PremiumVin	0.98 %	Casaleto	0.40 %	Inkerman	2.82 %
Bolgrad	5.35%	Bolgrad	0.87 %	PRESTIGIU M	0.33 %	Villa Krim	1.31 %
Villa Krim	4.94%	Vinlux	0.83 %	Shabo	0.26 %	Bolgrad	1.27 %

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27.66  
%

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6.88  
%

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3.57  
%

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8.49  
%