



**UNIVERSITÀ DEGLI STUDI DI PADOVA**

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**Second Cycle Degree (MSc) in Italian Food and Wine**

**STRUCTURE OF ITALIAN GI WINES EXPORTS TO RUSSIA (2012-2020):  
A SHIFT-SHARE ANALYSIS.**

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# Abstract

The main purpose of this paper is to analyze changes in Italian GI wine exports to Russia using static and dynamic shift-share analysis methods. The analysis is conducted for the period of 2012-2020 using the data of Russian customs statistics.

A preliminary review of the economic situation in Russia in these years was made. The structure of foreign trade relations between Russia and Italy is analyzed. Particular attention is paid to the impact of the exchange rate between the euro and the ruble on imports of goods into Russia.

Apulia, Emilia-Romagna, Piedmont, Tuscany and Veneto were chosen as the regions under study in detail. The analysis is conducted for four price categories of still white, red and rosé wines, as well as for sparkling wines in general. The study makes a justification for the choice of price ranges.

The analysis shows that the Veneto region had the most intensive and harmonious development in the period under consideration, largely due to the Prosecco and low-priced white wines. It is revealed that the Apulia region showed the maximum growth dynamics of wine exports to Russia, relying first of all on the opportunities of the region and ahead of the national dynamics. Exports from Emilia Romagna lagged behind the average dynamics of wine exports from Italy, with key wines, namely Lambrusco IGP, losing significantly their share of exports. The Piedmont region increased slightly and lost its importance in exports due to a fall in the category of sparkling wines, namely Asti Spumante DOCG. Exports from Tuscany grew less, only about 12% and this was due to a drop in the previously popular category of red basic wines GI Chianti DOC. At the same time, white wines of entry level price categories showed the greatest growth.

The assumption of the influence of fluctuations in the euro exchange rate against the ruble on the dynamics of imports was confirmed. Thus, all regions, except Apulia, showed a drop in the value of exports in 2015. The crisis of 2016 had a less noticeable impact on the dynamics.

# Dedication

This work is entirely dedicated to my family, without whose constant support this thesis was impossible. They always inspire me for new achievements and serious steps in my life. I thank my wife for her moral support in times of trials that fell at the time of writing this thesis.

# Declaration

I confirm that this thesis presented for the degree of Master of Science in Italian Food and Wine, has

- been composed entirely by myself,
- been solely the result of my own work,
- not been submitted, in whole or in part, for any other degree or professional qualification.

Aleksei Semenov

# Acknowledgements

I would like to express my gratitude to all the professors of the Italian Food and Wine program for their passion and desire to introduce students to Italy, its customs and culture, of which Italian wines and traditional products are a huge part. Truly this course allowed me to discover a beautiful country and look at it from the inside.

I especially want to thank my supervisors Professor Edi DeFrancesco and Professor Francesco Pagliacci for their support and guidance. I seriously studied an interesting method of statistical data analysis, which allowed me to take a new look at the structure and trends of Italian wine imports into Russia.

I also thank the management of the Arsenal company, which provided the opportunity to use the customs statistics database for the period 2012-2020 for the research.

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# Chapter 1

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## Introduction

Italy and Russia have been linked by cultural and business contacts for centuries. Italian foods and wine have won particular popularity. For several years now, Italy has held the first place among other countries exporting wine to Russia. From 2012 to 2020 the volume of wine exports with geographic origin has doubled. Nevertheless, tools for assessing the structure of regions in exports are limited. The main source of information is customs statistics, but, firstly, access to it is limited, and, secondly, the data contain direct indications of the region only partially. The author has worked on extracting all the necessary information from the customs database, and analyzed the structure of export growth from Italian regions on the basis of Shift-share analysis.

In this work, the study area was wine exports from the five largest wine-producing regions of Italy: Apulia, Emilia-Romagna, Piedmont, Tuscany and Veneto. The study period covers 9 years from 2012 to 2020 inclusive. Data for 2021 were not yet available at the time of writing. Consideration was limited to natural grape wines with the HS commodity code 2204. In addition, table wines that do not have a geographical indication were not considered, i.e. PDO and PGI wines were the subject of the study. We should especially note that the research was based on Russian customs data, so there may be discrepancies with the data on exports from Italy to Russia based on Italian sources. This is due to the fact that logistically wine does not come to Russia, as a rule, directly, but through the Baltic countries, where intermediate warehouses are located and excise stamps are affixed.

Shift-share analysis, which has been known since the 1960s, was chosen as the method for studying the structure of exports. It has proven to be an effective tool for analyzing regional development. However, numerous uses of the method for the task of analyzing trade flows are also known. In this paper, 16 groups were used instead of regional economic sectors, compiled for still and sparkling wines according to price ranges and color.

In the chapter General Context the history of relations between Italy and Russia is examined. An overview of the main political events and economic indicators in the period 2012-2020 is made. Then foreign trade relations between Italy and Russia are examined, including the wine market.

The chapter Methodology describes the source of data. It discovers the structure of Russian customs statistics, discusses the quality of data and methods to improve it. The method of forming price ranges for further analysis is described separately. Then a literature review on Shift-share analysis is made and the methodology of its application to the task under consideration is discussed. A comparison of static and dynamic Shift-share analysis models is made.



In the Chapters Results and Discussion the results obtained are shown and their detailed interpretation in terms of export regions and price and quality groups of wine is given.

The Conclusion chapter summarizes the results of the work and draws conclusions about the applicability of the method to the problems similar to the one considered. The bottlenecks and directions of further work are also noted.

The Appendixes give the most detailed information about the initial data and the results obtained in the form of tables and graphs.

It should be specifically noted that Arsenal Company, providing the data, undertook an obligation from the author not to publish information about the names of producers and importers, their addresses, as well as the prices and the volume of imports of specific wines. In the results presented by the author, the information allowing for the above-mentioned identification has been removed.

# Chapter 2

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## General context

### 2.1 History of relations between Italy and Russia.

Relations between Italy and Russia have a long history; there have been difficult periods over the centuries, but on the whole these relations can be called positive, especially in comparison with other examples both in Europe and around the world. Cultural, scientific, and economic ties between the two nations have been forged over the centuries. Territorial distance (the land distance between Moscow and Rome is 3,000 kilometers), the complicated relationship between the Roman Catholic Church and the Russian Orthodox Church, and the difference between Latin and Cyrillic script have all contributed to the relatively late start of mutual contacts. However, this has not prevented the further development of a favorable climate for cultural and economic cooperation.

Relations between Russia and Italy date back to contacts between the Roman Church and Kievan Rus' at the end of the tenth century [1, p. 344]. Russian princes sent their envoys to Rome to negotiate with the Holy See, pilgrims also went to the Christian shrines in Bari. There are also confirmations of contacts of Russian and Genoese merchants in Crimea and on Sea of Azov in twelfth–thirteenth centuries [1, p. 346].

The next important stage in the development of relations between the two countries was the reign of Peter the Great. In the early seventeenth century Russia actively invited Italian masters, and Italy at the will of the tsar sent dozens of young Russian nobles to study. And, of course, the founding of St. Petersburg in 1703 launched an active Italian expansion to Russia. The main famous palaces and mansions were built by Italian masters, including Domenico Trezzini, Carlo Rossi, Francesco Rastrelli.

Up until World War I and a succession of revolutions in Russia, Italy attracted the attention of Russian writers and poets, Italian cities became desirable destinations for tourism, and even new homes for many Russians. Economic cooperation expanded and was of mutual benefit. As of 1913, under the total hegemony of Germany, which accounted for almost 40.0% of Russia's foreign trade turnover, Italy was among the ten largest partner countries, with a share of 3.1% of total turnover and almost 5.0% of exports from Russia [2].

The Soviet period, world wars, certainly radically reduced the number of business and cultural and tourist contacts. A new round of relations came in the post-Stalin period in the 1960s. The first official visit of the Soviet foreign minister to Italy took place in 1966. Agreements on cooperation in the economic sphere were signed. In 1969, the USSR signed a contract with ENI for gas deliveries, which has been in effect for 53 years [3]. With the participation of companies Olivetti, Pirelli and others, Italian-Russian Chamber of Commerce

and Industry was formed.

After Gorbachev's reforms and the fall of the Berlin Wall, market relations engulfed Russia, and residents were able to travel abroad and exchange rubles for foreign currency. Italian goods began to come in droves to the USSR, and then to Russia. A new policy has opened the way for Italian wine to Russia. In the USSR it was almost never supplied — in 1991, for example, exports from Italy to all the republics, including Russia, amounted to €108,000. In the new Russia the Italian wine immediately became popular as it appeared on the market — in 1992 imports amounted to €2,660,000 [4].

The main event of the recent history was undoubtedly 2014, when in connection with the Ukrainian issue the European Union adopted sanctions against Russia [5]. In response, Russia announced counter-sanctions, which resulted in an embargo on many European goods. Producers of meat and dairy products, fruits and vegetables were severely affected. Fortunately, wine imports were not directly affected by the counter-sanctions, but the indirect effect was noticeable (see Section 2.2.2.2).

## 2.2 Russian Federation, political and economic characteristics in the period 2012–2020.

The period considered in this paper was full of multifaceted events in both economic and political life. Both market factors and state regulation influenced the situation with wine imports into Russia. Alcohol industry in Russia has always been under close control of the state. By 2012 the customs requirements for wine imports had already been fully formed, and a Unified State Automated Information System (EGAIS in Russian) had been implemented for accounting and controlling the turnover of alcoholic beverages. Wine consumption channels had a close-to-modern appearance. Nevertheless, in the nine-year period under consideration, the Russian imported wine market has gone through several shocks, and the structure of imports has changed. Among other things, this has affected the parameters of wine imported from Italy. In this section we will look at the basic characteristics of the country and market, the key events of 2012–2020, and assess Italy's place in Russia's foreign trade turnover.

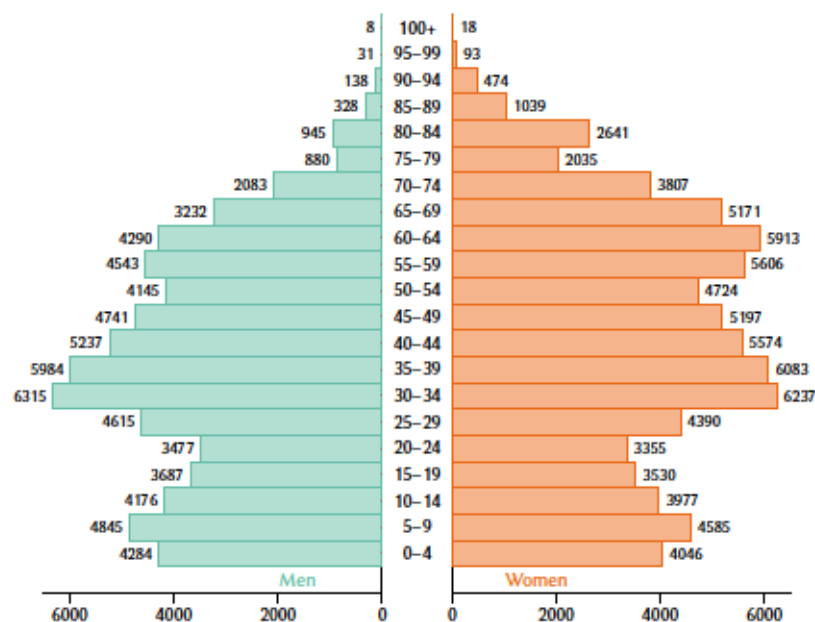
### 2.2.1 Main Macroeconomic Indicators Characterizing the Development of the Russian Federation.

Russia is the first country in the world in terms of territory. It is located in Eastern Europe and Northern Asia. It has a population of 146 million people (9<sup>th</sup> highest in the world)[6]. Russia is the coldest country in the world, with an average annual temperature of minus 5.4 degrees centigrade [7]. The territory of Russia is 65% covered by permafrost [8]. The ratio of the urban population to the rural population on January 1, 2021 was 74.7% to 25.3%, whereas in 2012 the ratio was 74.0% to 26.0%. Thus, the number of urban residents for 9 years increased

by 3,750 thousand people — in fact, this number corresponds to the number of residents of a significant region of Russia. As of January 1, 2021, there were 67.8 million men and 78.3 million women, or 53.6% to 46.4%. The working-age population (potential wine consumers) of Russia is 120.3 million people, which is 82.3% [9, (2021)].

The demographic profile of the population is shown in Figure 2.1. There is a noticeable dip caused by the fall in the birth rate in the late 1990s and early 2000s. The reason, most likely, was the difficult economic (crisis of 1998) and political (Chechen war, the end of Yeltsin's presidency) situation. The analysis of the demographic profile also suggests that the main target audience for wine distributors is the group from 30 to 50 years old, in addition to the obvious economic activity, this is also the maximum layer of the population.

Figure 2.1: Russia's demographic profile in 2020, thousands of people.

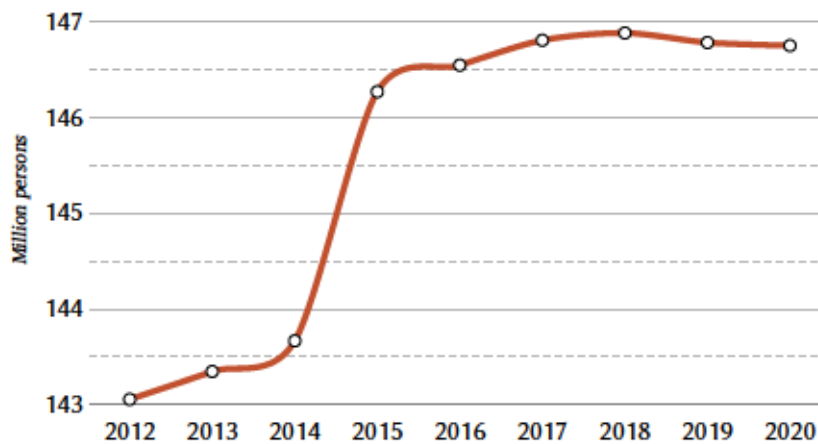


Source: author's elaboration of Rosstat [9, (2021)] data.

Russia's population has been stagnating since 2017, fluctuating minimally within the 147 million people (see Figure 2.2). Prior to that, there had been steady growth since 2012. When analyzing the dynamics, it should be taken into account that, since 2015, for well-known reasons, the official statistics include data on Crimea.

Russia's nominal GDP for 2019 in current prices is €1.509 billion, GDP Purchasing Power Parity €3.661 billion. Accordingly, Russia ranks 11<sup>th</sup> and 6<sup>th</sup> in the world by these indicators (Figure 2.3). But in terms of GDP per capita (€10,282), calculated on a nominal basis, the country is in 66<sup>th</sup> place. Over the nine years under review, GDP per capita even fell slightly (2012 — €11,875). It peaked in 2013 at €12,030 [6]. The dynamics of GDP in nominal terms over the period under consideration is shown in Figure 2.4. After a period of growth, there was a turning point in 2014, resulting from the political situation, economic sanctions and counter-sanctions.

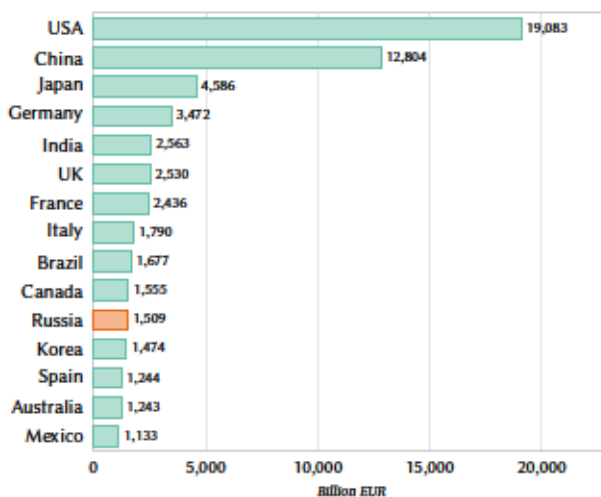
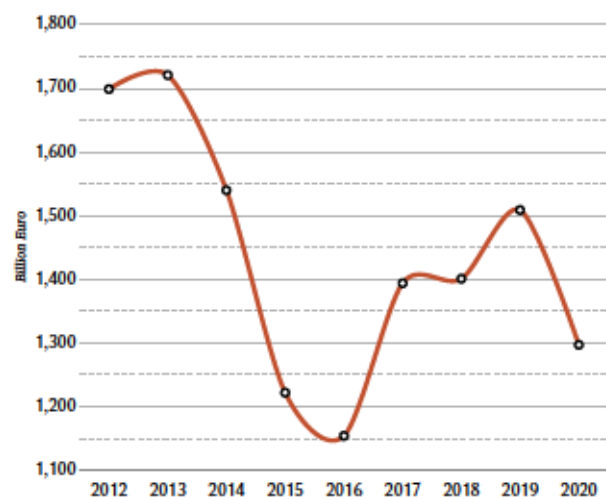
The events of 2014 in the Russian Federation also provoked a record in the dynamics of the

**Figure 2.2:** Russian Federation's population dynamics.

Source: author's elaboration of Rosstat [9] data.

percentage change in inflation in terms of average consumer prices. Against the background of a more than calm situation in the European Union (the level of percentage change in inflation is close to zero), the value in Russia in 2015 was almost 16.0% (see Figure 2.5). Subsequently, with slight fluctuations, the inflation rate in Russia has been decreasing [6].

One of the few economic indicators not affected by the 2014 domestic crisis is the unemployment rate relative to the entire labor force. In Russia, the value of this indicator was at historic lows during the period under review [10] (e.g., below half the corresponding EU indicator in 2012–2014). Even due to COVID-19 restrictions, the unemployment rate did not

**Figure 2.3:** GDP of leading countries in 2019.**Figure 2.4:** Russia's GDP by year.

Source: author's elaboration of IMF [6] and Rosstat [9] data.

exceed 6% (see Figure 2.6). But for almost the entire period there is almost no dynamics in this indicator, while in Europe during the last 7 years of the period under consideration there has been a steady improvement of the situation and by 2020 the unemployment rate approached the Russian one [6].

Figure 2.5: Inflation rate in Russia and EU.

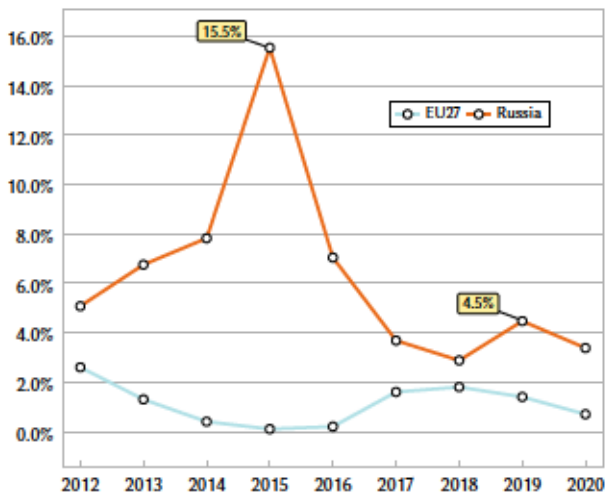
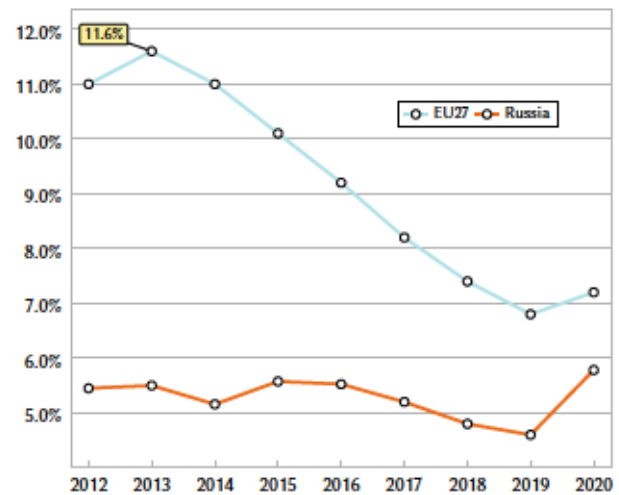


Figure 2.6: Unemployment rate in Russia and EU.



Source: author's elaboration of IMF [6] and Rosstat [9] data.

An important issue for further analysis is Moscow's special position. According to 2019 data, the population of the capital was 12,678 thousand people (8.6% of the country's population), and the Gross Regional Product (GRP) of Moscow was far ahead of other regions and amounted to €313,041 thousand or 20.7% of the total GDP of Russia (see Table 2.1). GRP per capita in Moscow in 2019 was €24,691, almost three times more than in Russia without the capital and St. Petersburg. At the same time, the result of the second most important city in the country differs from the national average not so much. Curiously, Moscow 2019 GDP per capita corresponded to GDP per capita in Spain, Cyprus, or Slovenia, while the rest of Russia corresponded to GDP per capita in Turkey, Mexico, and Kazakhstan [6][9, (2020)] .

Table 2.1: GDP and GRP indicators of 2019.

Region	GDP(GRP), x1,000	%GDP(GRP)	Population, x1,000	%Popula- tion	GDP(GRP) P.C.	GRP P.C. / GDP P.C.
Russian federation	1,508,973	100.0	146,749	100.0	10,282	100.0
Moscow	313,041	20.7	12,678	8.6	24,691	240.1
St.Petersburg	81,543	5.4	5,398	3.7	15,106	146.9
Rest of R.F.	1,114,388	73.9	128,673	87.7	8,660	84.2

Source: IMF [6] and Rosstat [9, (2020)] data.

Indeed, the concentration of incomes in the main city of the country is phenomenally high, and the contrast with other regions is great. This largely dictates the distribution of demand, including for wine. The largest importers and distributors of wine in Russia are based in Moscow. Rare and expensive wines are consumed almost exclusively in Moscow — in expensive restaurants and elite wine boutiques.

## 2.2.2 Key events in political life during the period under review.

### 2.2.2.1 Putin's Munich Speech, Medvedev's presidency.

The period covered by this paper was eventful, but the starting point for many further changes was President Putin's 2007 Munich speech. As further events showed, many foreign and domestic political decisions of the Russian leadership were dictated by the outcome of the security conference in Europe and the U.S. decision to deploy weapons in Poland and the Czech Republic, as well as to recognize Kosovo [11]. Later on, Putin repeatedly referred to these events, which confirms their importance. At the beginning of the period under consideration, until May 2012, Dmitry Medvedev was, rather formally, the president of Russia, but still, certain steps to liberalize politics and the economy were implemented by him. State-owned enterprises worth tens of billions of dollars were privatized as part of a large modernization project; the first steps were taken to diversify the economy and diminish the importance of the oil and gas component; a federal research center named Skolkovo was opened; a broadband Internet connection was largely implemented throughout Russia; and, finally, an important milestone was reached by Russia's accession to the WTO (a decision in principle was made in December 2011), which raised the image of Russian business environment in the eyes of foreign investors at that time [12]. However, it is clear that Medvedev's only 4-year term was rather technical, and important foreign policy decisions were still made by Putin. Under Medvedev's formal leadership, Russia went to war with Georgia in 2009 over the breakaway territories of Abkhazia and South Ossetia, for the first time clearly pointing out to the USA their plans to deploy missile defense in Europe. These events, of course, should be seen in contrast to Medvedev's reforms [13].

### 2.2.2.2 Crimea 2014 as a watershed. Sanctions and counter-sanctions, import substitution.

As can be seen in the graphs of the main economic indicators (Figure 2.4, 2.5), 2014 fundamentally changed the situation in the country. The political aspect of the Ukrainian question is beyond the scope of this paper, but its foreign and domestic economic aspects are difficult to overestimate and important to keep in mind.

First of all, in response to Russia's actions in Crimea and Donbass, the EU, the US and other Western countries initiated a policy of sanctions, thereby severely limiting access of Russian companies to finance and technology. Measures were taken to limit Russia's access to EU capital markets, an embargo on imports and exports of weapons and related materials from/to Russia, a ban on exports of products for deep-sea oil exploration and production [14, p. 5].

Replying to international pressure, Russia's government announced counter-sanctions and proclaimed a policy of import substitution, banning the import into the country of certain food products from the countries that imposed the sanctions. This ban applies to beef and pork of all kinds, poultry and poultry products, processed meat products and sausages, milk and dairy

products, including raw milk and all food products containing milk, as well as fish, vegetables and fruits.

It is important to note that the EU sanctions affect only a very small group of goods, accounting for a small share of the EU's total exports to Russia. The Russian embargo is much more significant, both for the EU, for which Russia is the second most important destination market for agri-food products, and for Russia, since the EU is their largest supplier [14, p. 5].

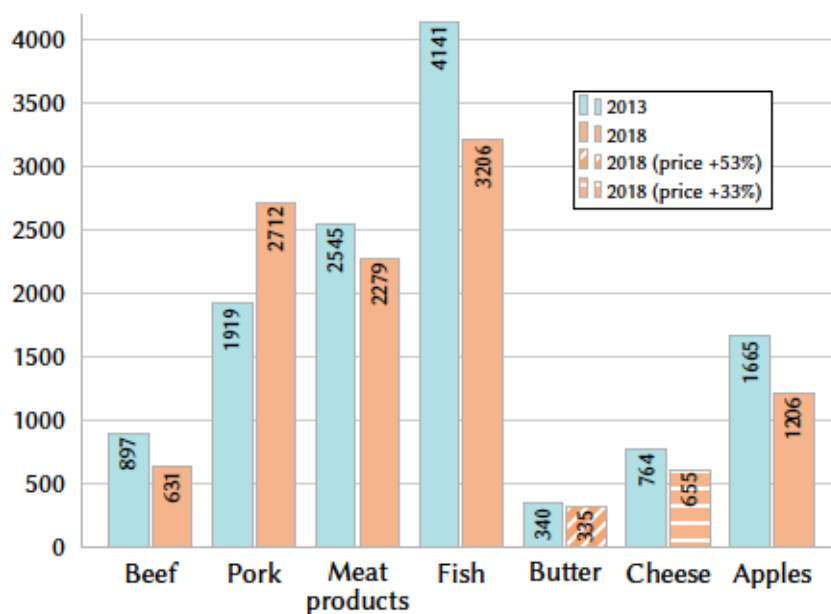
As a real example, the northern regions of Italy — Lombardy, Veneto and Emilia Romagna, which lost 72% of their exports to Russia [15, p. 5].

Inside Russia, however, it was assumed that the adoption of counter-sanctions would lead to an increase in domestic production and substitution of imported counterparts.

Indeed, according to [10, p. 7] data, in 1999 the share of agricultural goods in total Russian imports exceeded 28.5%. Since 2014, however, total Russian food and agricultural imports have steadily declined, reaching a low of 12.7% in 2017. Exports of Russian agricultural and food products have been minimal in the post-Soviet era. After the introduction of import substitution measures and support for domestic producers, it rose sharply, from an average of 2.0% from 1995 to 2010 to 6% and 5.8% in 2016 and 2017, respectively. In 2016, Russia became the largest wheat exporter in the world. In addition, poultry, sunflower seed, and sugar beet exports [10, p. 7] had the leading position.

However, the effect of import substitution for different groups of food products is different [16]. Only a small part of the imported nomenclature has been successfully replaced by domestic production (e.g. poultry, pork, milk). For the most part, however, either consumption of goods has fallen with higher prices — cheese is a prime example — or it has returned to previous volumes but prices have risen significantly — butter is an example (see Figure 2.7).

**Figure 2.7:** Counter-sanctions effect. Consumption of selected foods, thousands of tons.



Source: author's elaboration of data from [16].

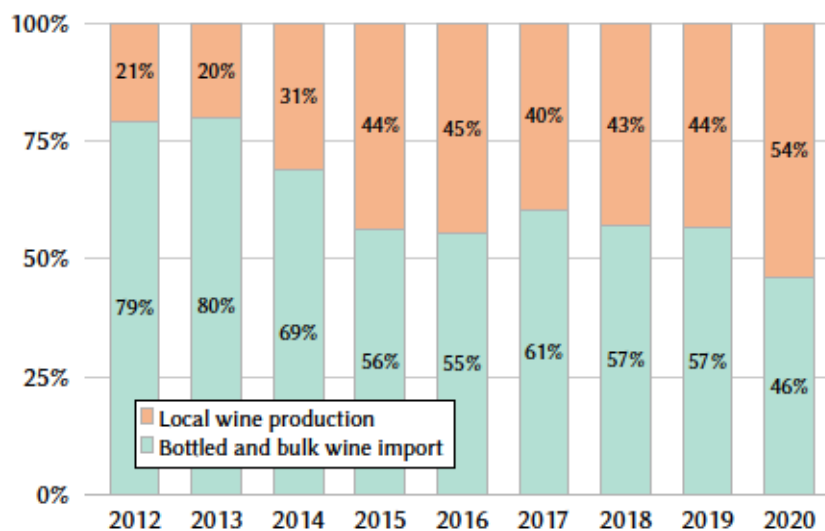


Since the introduction of counter-sanctions for lovers of gourmet products in Russia there was no legal access to, for example, Italian cheeses and meat products. Italian restaurants have been using some local substitutes adapted to the chefs' needs. Some specific ways of delivery of original goods from Europe took place. For example, a loophole exists in the form of imports by mail for private consumption up to 5kg per person. However, this channel is small and is also beginning to be restricted. More goods from the banned list come through third countries under the guise of being produced in their territory, such as Belarus. In 2016, exports from Belarus to Russia for some groups of food products exceeded the total domestic consumption by several times [17]. At the same time, of course, it is impossible to guarantee quality.

In addition to the direct damage from the lack of exports to Russia, there is the compromise of Italian products due to the spread of imitations that have nothing to do with Made in Italy, but are made in Russia or Belarus or in countries not affected by the embargo, such as “parmesan” and “gorgonzola” of Swiss, Brazilian or Argentine origin.

Italian restaurants in Russia, after rapid growth, are at risk of finding themselves in a difficult position because of the lack of basic ingredients. In some cases dishes have disappeared from menus, in others they have been replaced by local or foreign surrogates [18]. The last bastion of guaranteed Italian quality here remains wine. Although wine imports were not restricted, the general policy of promoting Russian-made goods resulted in a noticeable increase in local wine production (see Figure 2.8). In 2013 a policy of support for Russian wine producers

**Figure 2.8:** Dynamics of import and local wine production.



Source: author's elaboration of Federal customs service [19], Rosstat [9] and Federal Alcohol Market Regulation Service [20] data.

was adopted, but the main contribution to the change in 2015–2016 was made by the new vineyards annexed to Russia on the territory of Crimea. The ratio of imported wine (bottled and bulk) to wine produced in Russia from local wine materials (the nuances are discussed in the Section 2.4.1) in 2013 was 79% by 21%. In 2020 the situation is radically different — the majority, i.e. 54% of bottled wine is made from local raw materials. The non-inclusion of

imported wine in the list of sanctioned products was obviously influenced by the fact that the Russian Federation could not cover consumption needs with its own production. To this day, this state of affairs persists, although the trend gives food for thought about the prospects of imports. In the Section 2.4 I will discuss the problem in more detail.

In connection with the Ukrainian events after 2014, domestic tourism received extensive support, including financial support. Travel abroad decreased, and the turnover of the domestic tourism industry increased. However, one cannot discount the fact that during the same period the euro exchange rate sharply changed against the ruble, which, naturally, cut off a large number of potential trips to Europe, for example. Thus, one of the tools for attracting attention to Italian wine and lifestyle has weakened noticeably. And so it happened that in 2020 this trend has only intensified due to the COVID-19 pandemic and the global decline of the tourism industry.

### **2.2.3 Distinctive indicators of Russia's economy. Ruble exchange rate importance explained.**

#### **2.2.3.1 GDP structure and real incomes of the population.**

In Section 2.2.1, we examined the most important indicators of Russia's economy and noted that the country ranks fairly high in terms of nominal GDP. Here, we will briefly analyze how this state of affairs is achieved. First of all, we will look at the structure of GDP in dynamics based on data from 2012 and 2020. The extractive industry played and still plays a key role. In 2019, it contributed 13.5% to the country's GDP; moreover, oil and gas processing is about one-third of the entire manufacturing industry. Thus, almost 20.0% of all GDP is supplied by minerals (see Table 2.2). Contrary to the government's plans to reduce the share of the extractive industry to 7.5% of GDP by the end of the decade, the situation is reversed. Revenues from oil and gas production formed 39.0% of the country's budget (according to 2019 data) [21]. On the one hand, access to such natural wealth provides a regular inflow of funds into the economy, on the other hand, fluctuations in the cost of a barrel of oil in the world market can have a negative impact on the state of finances. A vivid example of such influence is the change in the euro/dollar exchange rate against the ruble having the background of oil price fluctuations. The following section will examine the dynamics of the euro exchange rate over the period 2012–2020 and compare it, among other things, with the dynamics of oil prices. The share of agriculture remains high compared to Europe and has even increased slightly due to the counter-sanctions policy.

On the contrary, the total volume of services has decreased, which indicates that Russia is moving in the opposite direction from, for example, the state of affairs in the European Union, where services form almost  $\frac{3}{4}$  of GDP. It should be noted that the hospitality industry accounts for only 1.0% of Russia's GDP. For example in the EU 3.7% and in Italy 4.4% [23]. This is an important indicator of the fact that the structure of food consumption and, in particular, wine consumption in Russia has a marked bias towards retail trade, and not the service industry

Table 2.2: Russia's and EU's GDP structure, %.

GDP structure / Year	Russia		EU
	2012	2019	2019
<b>Industry (including constructions)</b>	<b>35.7</b>	<b>39.2</b>	<b>24.6</b>
Mineral extraction	10.9	13.5	
Manufacturing industries	14.9	16.8	
Energy, water supply, construction	9.9	8.9	
<b>Services (including non-market services)</b>	<b>60.4</b>	<b>56.7</b>	<b>73.7</b>
Commerce	18.3	14.2	
Transport	7.5	7.3	
HoReCa	1.0	1.0	
Other services	33.6	34.2	
<b>Agriculture</b>	<b>3.9</b>	<b>4.1</b>	<b>1.7</b>
<b>GDP</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Eurostat [22], Rosstat [9, (2020)].

— HoReCa plays a markedly lesser role than in Europe. That is, the approach of at-home consumption is widespread, whereas in Europe out-of-home consumption is typical. The added value formed in Russia by the service sector in the restaurant and hotel sector relates to the retail turnover of food and tobacco about 1:9 [9, (2020)]. The imbalance between Moscow and the rest of Russia is pronounced in on-premise consumption. In 2019, on-trade turnover in Moscow and the Moscow region was 25.0% of the figures for Russia, with the share of residents of the capital region in the population of the country 13.9% [9, (2020)].

Another important economic indicator for understanding the nature of wine consumption in Russia is the real income per capita per month. Between 2012 and 2020, they increased from ₺23,221 to ₺36,073 per month, respectively. In euro terms, the average monthly income has fallen from €582 to €435 (in 2012 the euro to ruble exchange rate was 39.91, while in 2020 — 82.84 [24]). Moscow's income figures were significantly higher than the national average and stood at ₺77,283 or €933 in 2020 [9, (2021)]. For comparison, here is the average monthly wage in the countries which, according to OIV data, are the largest importers of wine [25]. UK — €3413, Germany — €3891, USA — €5029, France — €3304 [26].

### 2.2.3.2 Exchange rate as an integral indicator of the situation.

Since the purpose of this work is to analyze the situation with Italian wine imports into Russia, it is fundamentally important to consider the situation with the euro-ruble exchange rate (see Figure 2.9). The starting point for the formation of prices for imported wine on store shelves or in the wine lists of restaurants is the producer's price, which the importer pays in euros, exchanging rubles within the framework of foreign exchange contracts.

Primary for determining the official rate of the euro in Russia is the exchange rate of the dollar. The official U.S. dollar-ruble exchange rate is calculated and set by the Bank of Russia

Figure 2.9: Euro to ruble exchange rate.



Source: author's elaboration of Central Bank of Russia [24] data.

on the basis of interbank domestic currency market quotations. The euro exchange rate against the ruble is calculated on the basis of these currencies quotations against the U.S. dollar on the international foreign exchange markets, on the interbank domestic currency market, as well as the official rate of the European Central Bank.

During the period under review, from 2012 to 2020, the euro exchange rate experienced dramatic changes caused by various factors, which is directly reflected in the dynamics and structure of Italian wine imports to Russia and its value. From 2012 to 2020, the euro to ruble exchange rate varied in the range from 38.41 to 93.76 rubles per euro, and these fluctuations were uneven and repetitive. The GDP structure discussed in the previous section explains the nature of these fluctuations. A rather large sector of the economy is tied to the oil and gas industry, which makes it dependent on the global conjuncture. In addition, political factors, specifically the Ukrainian events and their consequences, have left their mark.

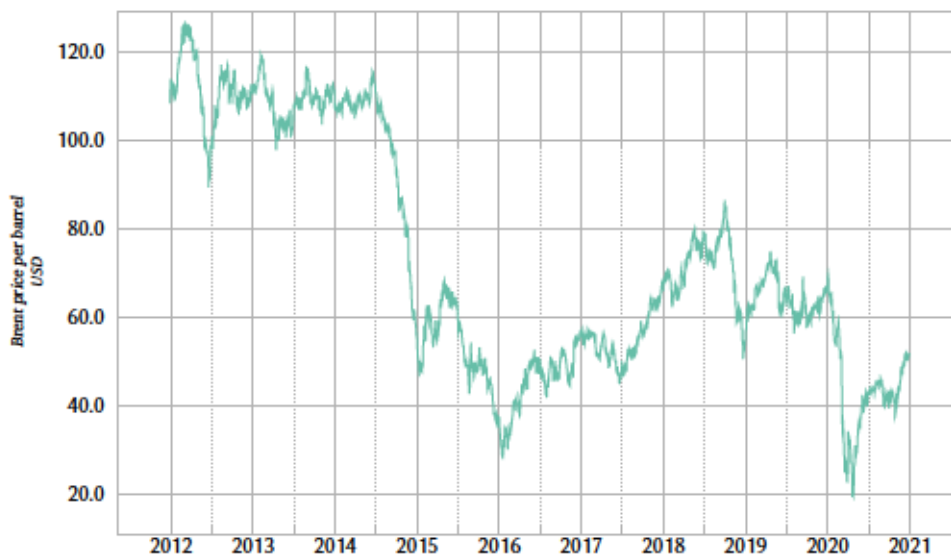
Let us consider the main significant occurrences that influenced the fluctuations of the euro exchange rate over the 9 years under consideration. After the 2008 global crisis and until the beginning of 2013, the exchange rate, with some variations, was kept at 40 rubles per euro. On March 17, 2014, in response to the annexation of Crimea, the US and the EU introduced the first sanctions against Russia. Restrictions were imposed on politicians and officials involved in the situation and their economic resources were frozen. Subsequently, joint EU-Russia activities were cancelled and, most importantly, Russia's access to European and American financial resources was restricted [14, p. 4]. In March 2014, there was the first jump in the ruble exchange rate to 51 rubles per euro.

After a slight decline in the summer of 2014 in autumn, there was another sharp rise, ending with a collapse of the ruble against the euro on December 16, 2014. The ruble lost

about 10% of its value overnight, causing panic on the currency and stock markets. The Central Bank of Russia (CBR) raised its key rate from 10.5% to 17.0% late in the evening on December 16 in an attempt to curb the fall in the ruble. At the beginning of 2014, the key rate was 5.5% — since then, the CBR has raised it seven times. Despite the CBR’s actions, that day became known as “Black Tuesday,” bringing a 15.0% drop in the value of the currency in spades to a peak rate of 84.59 [27][28].

In January 2016, Brent crude oil exchange prices plunged below \$30 for the first time since 2003 (see Figure 2.10). The exchange rate in Russia instantly reacted to the situation, bringing new records for the fall in the value of the Russian ruble. On January 22, 2016, a new record of 91.20 rubles per unit of European currency was set. By the beginning of 2017, the situation had improved noticeably, with the ruble exchange rate rising as high as the ₺60 mark, but from mid-year onward until the summer of 2018, the ruble returned to the 70÷80 ruble per euro corridor. On August 27, 2018, sanctions came into force, which do not directly

Figure 2.10: Crude oil Brent price.



Source: author’s elaboration of investfunds.ru [29] data.

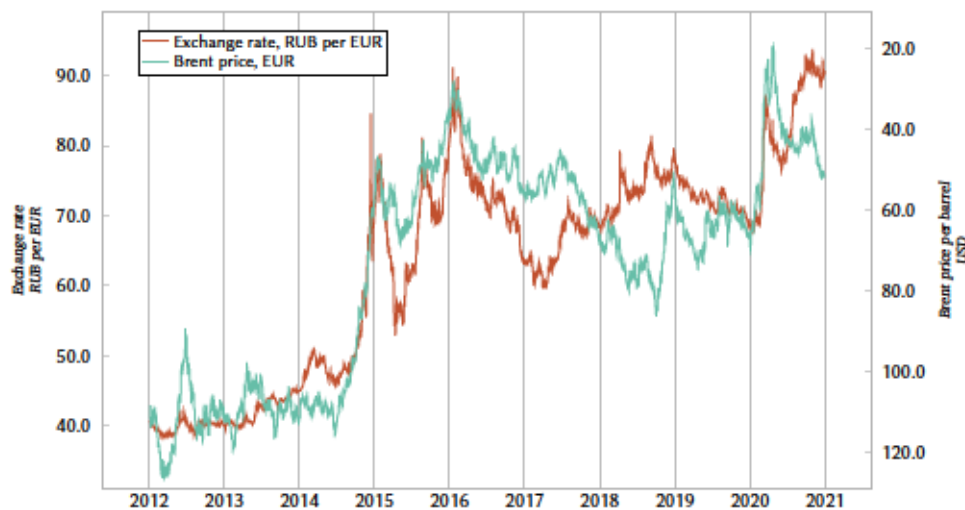
affect individuals or legal entities. They are related to the poisoning of former Intelligence Service Colonel Skripal and his daughter in the British city of Salisbury. Exports of goods and technology to Russia were banned, in the field of security, in addition, in January 2019, the EU imposed the first sanctions against individuals involved in the poisoning of the Skripals [30]. The exchange rate reacted with three peaks in the chart with a maximum of 81.39 rubles per euro.

The next jump in the exchange rate was caused again by the decline in world oil prices in March 2020. At that time, oil ministers from OPEC and non-cartel countries, including Russia, failed to agree on the parameters of a production cut agreement for the first time since late 2016. The need to cut production was triggered by the growing COVID-19 crisis hitting the global economy. On March 9, 2020, the drop in oil prices exceeded 30% (a record since 1991),

with Brent quotations dipping below \$30.0 a barrel. By early April, the Russian Urals price fell to \$10.5 per barrel, 4 times lower (which is really big difference) than the budgeted price, forcing the Russian government to take emergency measures. Obviously, these events had an impact on the currency exchange rate and on November 3, 2020, the maximum value of the euro over the entire period in question was set at 93.76 rubles.

As noted earlier, the linkage of the euro exchange rate to the events on the world oil market has a significant impact on the national currency health. However, it is curious as to what degree of proximity the ruble and the price of a barrel of oil on the world market are related. To demonstrate the correlation, the author overlaid a graph of the change in the euro-ruble exchange rate with an inverted graph of the oil price dynamics over the same period (see Figure 2.11). Except for the periods of the beginning of 2017 and the end of 2018, the graphs practically coincide. Well, the second half of 2020, marked by Covid-19 restrictions also do not match the overall picture.

**Figure 2.11:** Comparison of the euro exchange rate dynamics and the dynamics of Brent price.



Source: author's elaboration of Central Bank of Russia [24] and investfunds.ru [29] data.

Research shows that other factors, such as the price of natural gas, have no discernible impact. The price of oil, which affects the exchange rate of the Russian currency, has a decisive influence on the turbulence in the Russian market [31].

## 2.3 Foreign Trade of the Russian Federation.

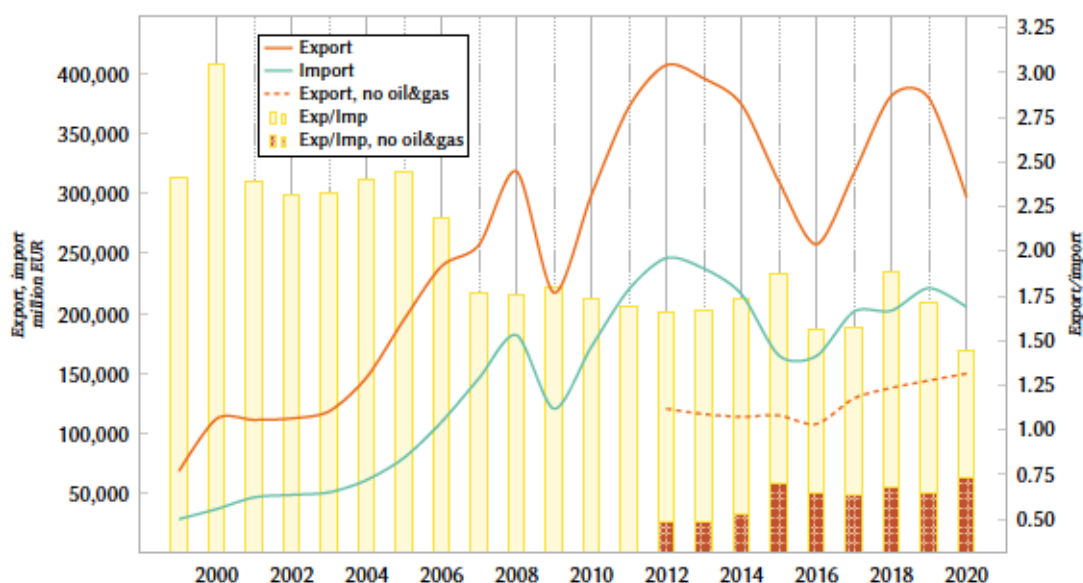
Foreign trade forms a significant part of the budget of the Russian Federation. In this section, we will examine the place of exports and imports in the country's economy and their structure. The share of wine imports in total imports of food and beverages also will be assessed.

### 2.3.1 Dynamics of import-export indicators.

The key factor since the collapse of the USSR and emergence of the independent Russian Federation in 1991 was that for the Soviet Union foreign economic activity was more a supplement to the planned economy, but in the formation of market conditions relations and a serious decline in production import-export operations became an important component of Russian economic life. In the process of forming an open economy, the country gained access to foreign experience and resources, and in general there was a gradual connection of the Russian Federation to the modern world infrastructure. Thanks to imports in Russia there appeared industrial and food products, which previously were imported in limited quantities, or were not available at all. Such goods include imported wines. In Soviet times, wine consumption was fully provided by domestic resources. With the beginning of the new relations, the situation changed, since the state regulation of imports was virtually absent at first. Indeed, the state was more interested in organizing the export of hydrocarbons to ensure a stable inflow of convertible currency into Russia. Imports developed spontaneously due to the activity of newly created private enterprises.

Export-import statistics since 1999 did not change its balance — exports always prevailed over imports (see Figure 2.12). Total foreign trade turnover grew steadily until the global crisis of 2008, then the dynamics recovered. From 2011 to 2014 is the period of maximum development in Russia's modern history (the peak volume of foreign trade transactions was €650 billion in 2012). The events of 2014 set back international activity by about 10 years. Then, until 2018, there was growth, slower than after the 2008 crisis, but the previous maximum was never reached. In the following period, the world oil crisis and the pandemic that began did the trick. As a result, exports in 2020 were 50% less than in 2012, and imports were 26% less [19][32][9]. Oil and gas played the leading role in Russia's exports. Figure 2.12

Figure 2.12: Dynamics of Russian export and import.

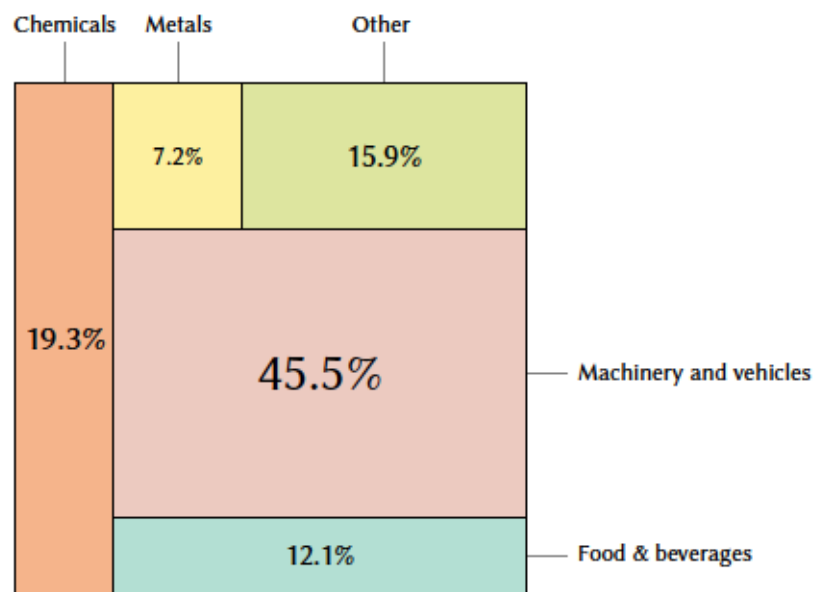


Source: author's elaboration of Rosstat [9] data.

shows a comparative characteristic of the value of exports relative to imports with and without hydrocarbons. The picture is fundamentally different — without oil and gas, exports were just 50÷75%% of imports in the period from 2012 to 2020.

In the total structure of imports (using 2019 as an example), almost half are machinery and equipment (45.5%), followed by products of the chemical industry (19.3%). Food products account for 12.1%. As for wine imports from abroad, its share in total imports in 2019 was about 0.4%, and in food imports it is 3.4% [9, (2020)]. Therefore, imported wine is still a long way away from a significant position in the structure of foreign trade.

Figure 2.13: Structure of Russian import in 2019.



Source: author's elaboration of Rosstat [9, (2020)] data.

### 2.3.2 Cooperation with Italy, main indicators of foreign trade.

As noted in Section 2.1, the trade relationship between Italy and Russia has a long history. Russia is rich in hydrocarbons but lacks diversity in the manufacturing sector, then Italy has complementary characteristics, which makes the two countries natural trading partners.

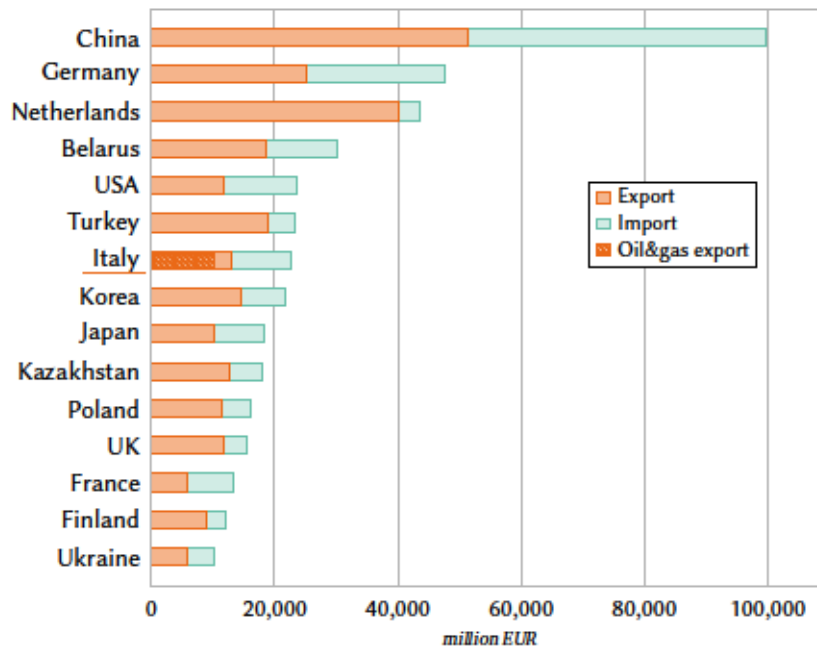
Italy ranks 7<sup>th</sup> among the world's foreign trade partners of Russia and 3<sup>rd</sup> among European partners after Germany and Holland [19].

Italy also ranks 7<sup>th</sup> in Russia's export structure (3.8%, data here and onwards for 2019), and 5<sup>th</sup> in its import structure (4.5%) [19]. Without hydrocarbons, Italy buys very few goods and services in Russia. Russia, on the other hand, is Italy's partner precisely as a market for a wide range of industrial and consumer goods.

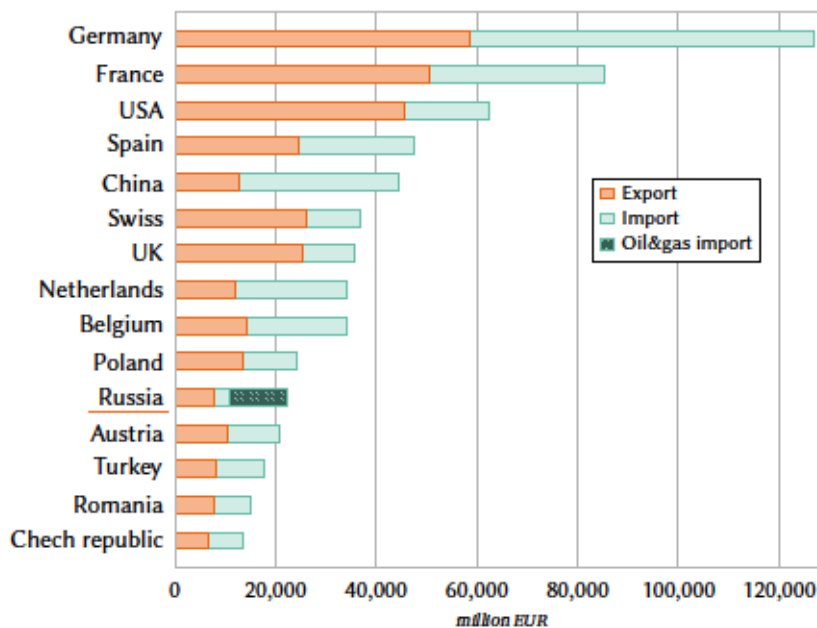
In Italy's foreign trade, Russia ranks 11<sup>th</sup> (2.4%). This position is composed of 8<sup>th</sup> place or 3.4% in imports and 13<sup>th</sup> or 1.6% in exports [33]. At the same time, it is energy products that contribute to a fairly high place both in terms of imports and total turnover.

Italian exports to Russia cover a number of sectors, the most important of which are



**Figure 2.14: Structure of Russian foreign trade by country in 2019.**

Source: author's elaboration of Federal customs service [19] data.

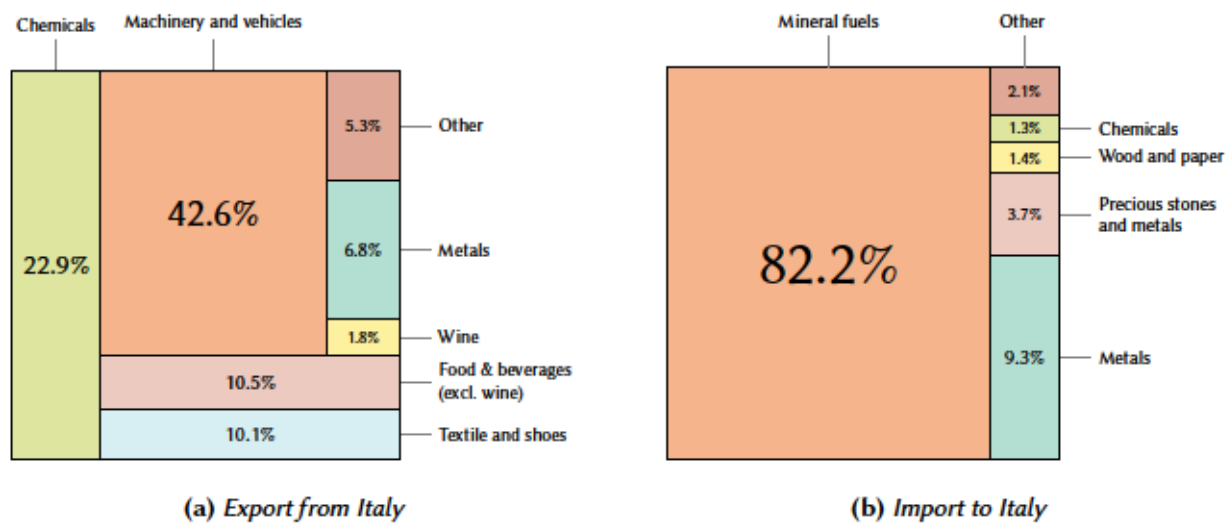
**Figure 2.15: Structure of Italian foreign trade by country in 2019.**

Source: author's elaboration of Italian Ministry of Foreign Affairs and International Cooperation[33] data.

machinery, appliances and equipment, chemicals, metals, food, textiles and footwear. From Russia to Italy, in addition to energy, metals, precious stones and timber are supplied.

In conclusion, let us consider the historical dynamics of Italian exports to Russia and what place wine occupies in foreign trade relations between Russia and Italy. If we compare Figure 2.17 and Figure 2.12, we can note that, in general, the profile coincides, except for a smoother period of Italian export growth from 2009 to 2013. In addition, the recovery from the events of 2014 has been less pronounced — as noted above, Russia's total imports in 2020 are down

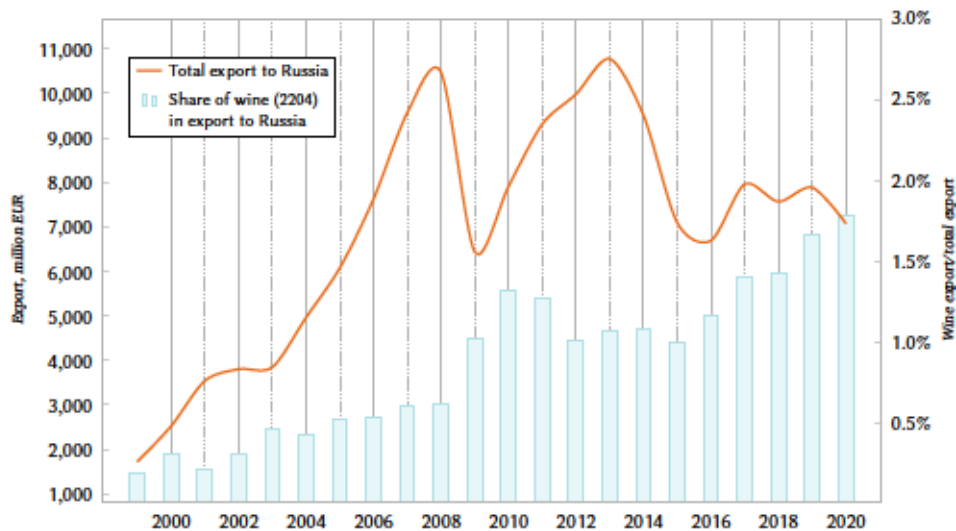
Figure 2.16: Structure of trade between Italy and Russia in 2019.



Source: author's elaboration of Federal customs service [19] data.

26% from 2012, while imports from Italy are down nearly 34% [4]. Counter-sanctions and a change of foreign trade partners had an impact.

Figure 2.17: Dynamics of Italian export to Russia.

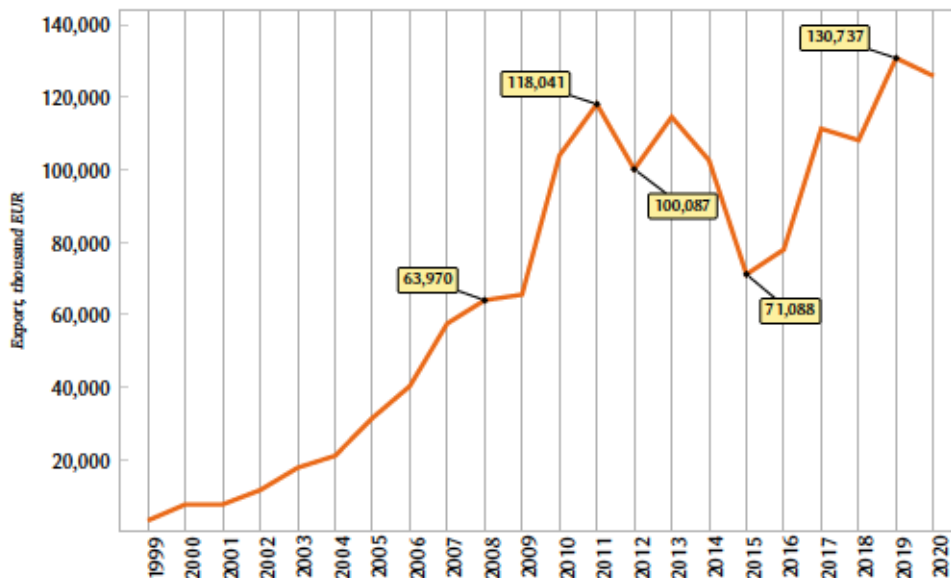


Source: author's elaboration of Coeweb Instat [4] data.

There is an interesting situation with the dynamics of wine exports from Italy to Russia. The period since 1999 is considered, earlier there are anomalies due to the transition period from lira to euro in the statistics of Coeweb ISTAT. The first observation — the crisis of 2008 had little effect on the dynamics of wine exports, the euro appreciated by 22% in 2009 [24], while imports in the post-crisis year even slightly increased. The specific fall of the wine market in 2012 was caused not by external factors, but by the state policy and toughening regulation in the sphere of turnover of alcoholic beverages. Then, the general decline for the whole economy after 2014, but after that, unlike the stagnant total export of Italy to Russia, wine is growing

steadily, almost without noticing the growth of the euro in 2018 due to the new package of sanctions, and only pandemic has stopped this growth (note that at the time of writing the preliminary data 2021 confirm the trend of active growth). The share of wine in Italy's total exports to Russia is growing rapidly, with some reservations, amounting to 1.8% in 2020.

**Figure 2.18:** *Dynamics of Italian wine export to Russia.*



Source: author's elaboration of Coeweb Instat [4] data.

Summing up this section, despite various obstacles of political and economic nature, Italy and Russia were stable partners on the international market, with energy imports being extremely important for Italy, and a wide range of goods from equipment to wine for Russia. However, in the ranking of foreign economic partners Italy is higher for Russia than Russia for Italy. Wine exports from Italy to Russia are actively developing.

## 2.4 Russian wine market: overview and place of Italian imports.

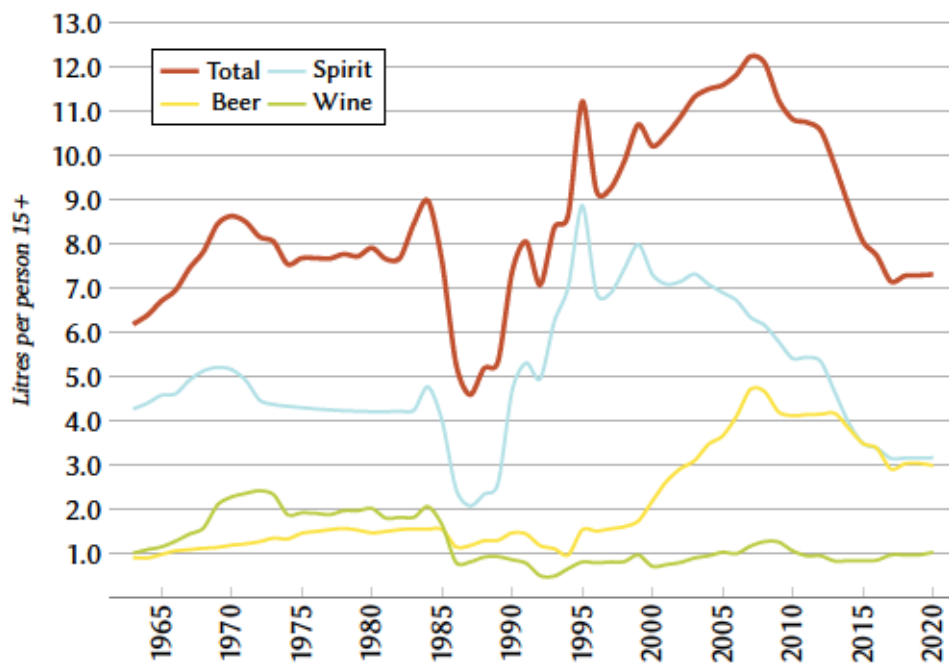
### 2.4.1 Overview of the consumption of alcoholic beverages and wine.

The inhabitants of Russia traditionally consumed large quantities of alcoholic beverages and, to a lesser extent, wine. Although if we go back to the period of the USSR, the level of consumption of grape wine was higher than today, although it was incomparably lower than in developed European countries [34]. Then, President Gorbachev's 1985 decree on measures to combat drunkenness led to the brutal extermination of vineyards and naturally reduced the volume of wine consumption. Since then, it has never returned to pre-Perestroika levels.

On the basis of data from the World Health Organization (see Figure 2.19) it is possible to trace the main trends in consumption. First of all, we note a much greater exposure to

fluctuations in alcohol consumption. After the anti-alcohol campaign, there was a sharp upsurge and then a gradual, orderly fall. The consumption of beer also shows considerable growth dynamics. Wine is the most stable consumer category. In general, it should be noted that during the period 2012–2019 there was a sharp drop in alcohol consumption with some stabilization in the last 2–3 years. At the same time drinks with low alcohol content prevail in the share over vodka and other strong drinks. For Russia this trend may well be considered a positive phenomenon. It is noteworthy that the crisis phenomena in the economy are reflected in the consumption dynamics. Thus, the graph of strong drinks shows spikes in 1998–1999 and in 2008–2009, which corresponds to the periods of economic crises. At the same time, the events of 2014 were not reflected in the dynamics.

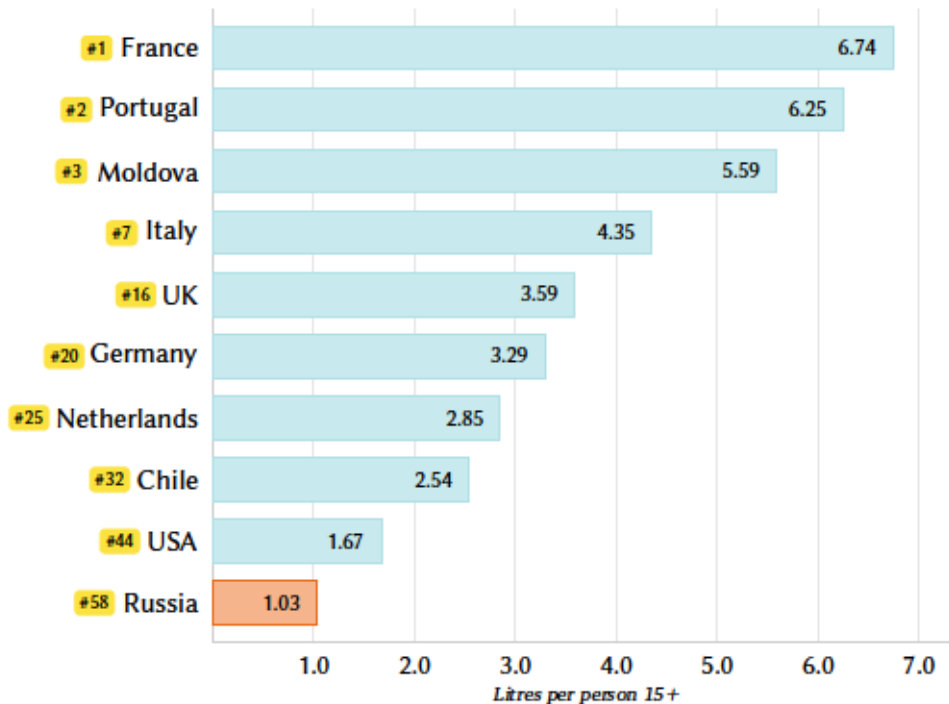
Figure 2.19: Consumption in liters of pure alcohol in Russia.



Source: author's elaboration of WHO [34] data.

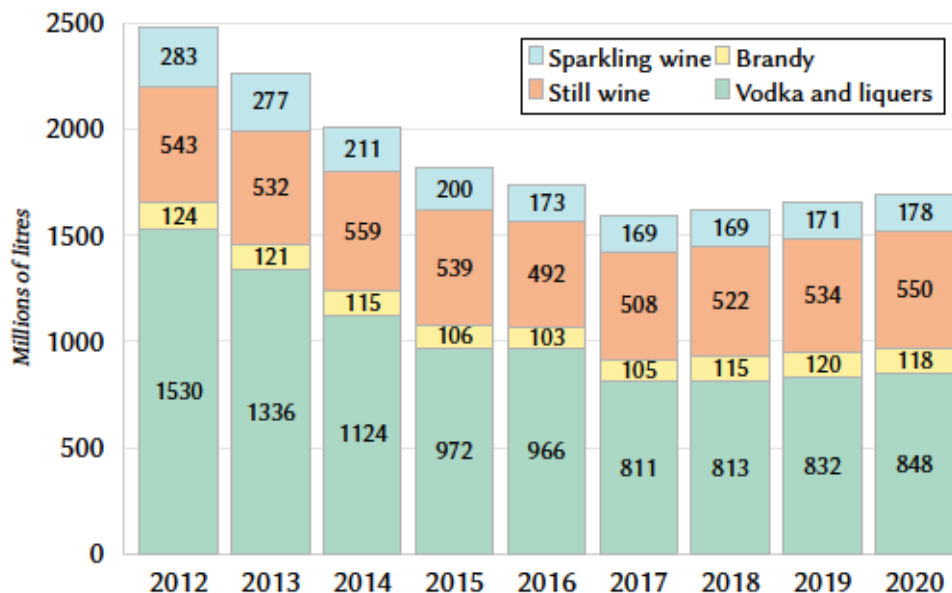
For reference, here are data on consumption in other countries and Russia's place in relation to them Figure 2.20. According to WHO data, the countries with the highest wine consumption in liters of pure alcohol per capita are Portugal, France, etc. Russia ranks 58<sup>th</sup> on this list (2019 data).

The actual consumption of alcoholic beverages (according to the Federal Service for Alcohol Market Regulation, annual retail sales, see Figure 2.21) in Russia changed as follows: from 2012 to 2020 radically decreased (by 45% consumption of vodka and spirits except brandy (called "cognac" in Russia — this is a separate topic beyond the scope of this paper), whose consumption was stable. Wine consumption was virtually unchanged, only in 2016–2017 there was a certain decline, which can be associated with a drop in imports in these years (discussed in the Section 2.4.3). Consumption of sparkling wines declined markedly towards the end of the period under review — by about 37%. This is rather a matter of consumer preference due

**Figure 2.20:** Consumption in liters of pure alcohol by country in 2019.

Source: author's elaboration of WHO [34] data.

to the emergence of various low-alcohol beverages during this period. Since their classification has repeatedly changed, it is quite difficult to trace the trend.

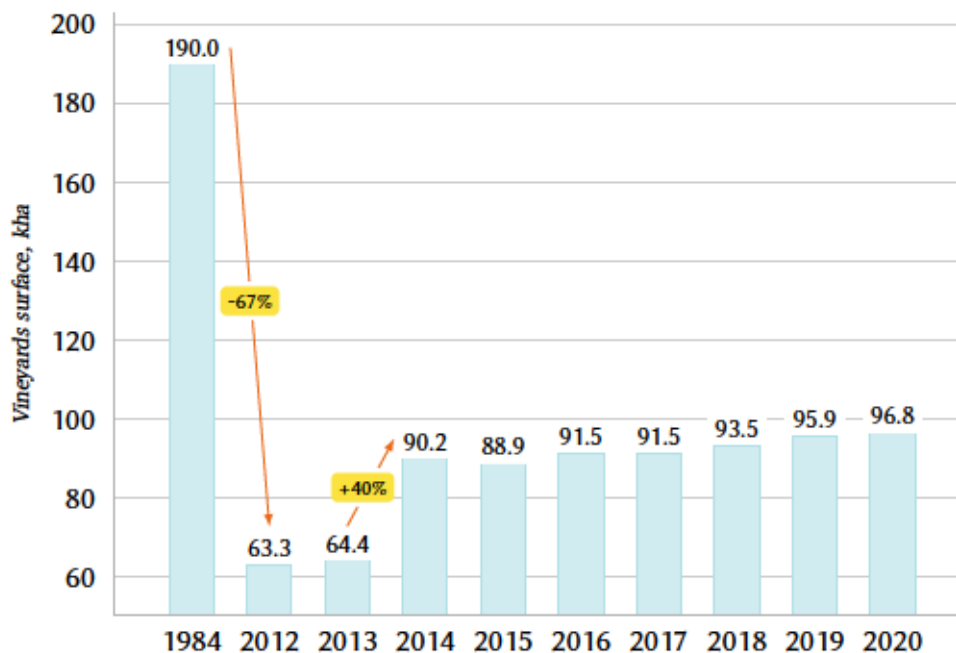
**Figure 2.21:** The actual consumption of alcoholic beverages in Russia.

Source: author's elaboration of Federal Service for Alcohol Market Regulation [20] data.

The Russian wine industry received a serious blow during Gorbachev's anti-alcohol campaign [35], the consequences of which have not been remedied to this day. In addition to Russia, the vineyards of Ukraine, Georgia and Moldova suffered. In Russia in 2012 remained only

63.3 kha or 33% of the pre-reform area (see Figure 2.22). The annual increase is about 2÷3 kha, except for 2014, when due to the Crimea the area technically increased by 25 kha [36]. The total area of agricultural land in 2020 in Russia was 222 Mha, in Crimea, Krasnodar Krai and Dagestan (regions favorable for viticulture) - 9.8Mha [9]. Thus, vineyards occupy 0.05% and 1.0% of the area, respectively. Obviously, local winemaking is far from being the most important component of agriculture. For comparison, in Italy the area of vineyards in 2020 was 681 kha, or 4.3 % of the total agricultural land [37].

Figure 2.22: Vineyards surface dynamics in Russia.



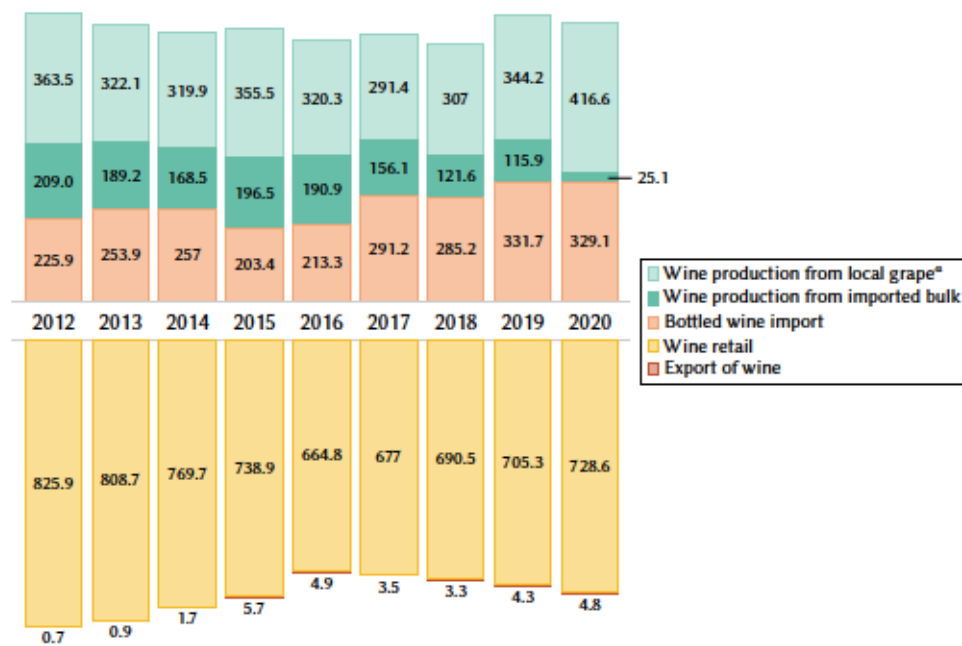
Source: author's elaboration of Rosstat [9],[35] data.

The Figure 2.23 shows a general diagram of wine production, imports, and sales in Russia. Retail data are taken from the EGAIS system (see Section 2.4.3 and [20]), which reflects sales of every wine bottle in Russia. Imports of bulk and bottled wine are confirmed by customs declarations, which can (and do, as will be shown later on) have substantive errors, but not in volume. The issue of production data, on the other hand, is not as clear-cut.

A significant volume of wine in Russia has traditionally been produced from imported bulk (the main exporter is Spain). For example, the famous types of “soviet champagne” were produced by 90% from imported wine material [38]. However, in December 2019 a law on winegrowing was passed [39], which prohibits naming Russian wine made from imported bulk. As of June 2020, this regulation went into effect, which affected bulk imports, and in 2020 it dropped to almost zero. Based on 2020 data, the volume of wine produced in Russia increased by 21% with only a change in acreage of 1,000 hectares. This statistic causes some skepticism, the reason may lie in violations of technology and the use of “specific” methods of winemaking.

According to [40], 627 thousand tons of grapes were harvested in 2018. With an area of 93.5 thousand hectares and taking into account the fact that about 80% of them are in fruiting

Figure 2.23: Wine production, imports, and retail in Russia.



<sup>a</sup>Contradiction between [20] and [9]. Federal Service for Alcohol Market Regulation [20] data used.

Source: author's calculations based on Rosstat [9], Federal Service for Alcohol Market Regulation [20], Federal customs service [19] data.

age, the average yield is 8.4 tons per hectare. In 2020 it was supposed to magically grow to 10.1 tons. Obviously, the quality has suffered noticeably.

This fact has not gone unnoticed by experts. For example, the article [38] analyzes this situation in detail and states that 25% of the wine produced in Russia after the introduction of the new law has an unclear origin. It draws attention to the fact that the volume of wine sales with unchanged imports even slightly increased, but the import of bulk almost disappeared. The study showed that the reasons for such magic could be the use of imported grapes, as well as the import of dry wine must concentrate to dilute it with water in the production process [38], which certainly falsifies the region of wine origin, not to mention the moral and ethical aspect.

As a side effect of the new wine law, therefore, there has been a significant production of wine of dubious quality, instead of at least correct wine from imported bulk. There is a clear gap in the law, and in the overall mechanism of alcohol market regulation, in controlling the chain from harvesting to bottled wine production.

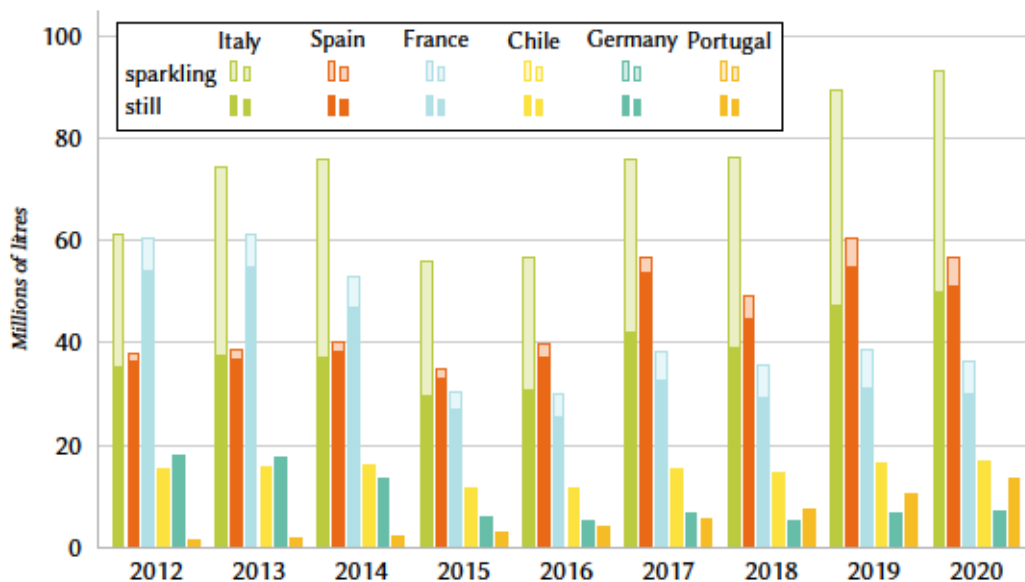
We should also note that data on local production vary widely in different sources. Data are available from Rosstat [9], the Federal Service for Alcohol Market Regulation [20], and, since 2016, the Analytical Center under the Government of the Russian Federation [41]. Since 2016, the data on wine production from different sources are consistent, but before that there is a strong discrepancy in figures. With a 35% difference in vineyard area between 2012 and 2019, local wine production is almost identical. Which raises skepticism about the quality of the data prior to 2016. We can assume that there is no single source of information that provides correct data throughout the period under study.

Taking into account the realities of the Russian market, there are two ways to guarantee the quality for consumers. First, to rely on local producers who have their own vineyards and do not make wine from purchased raw materials. And second, the purchase of imported bottled wine. With consumption from 700 to 800 million liters per year and real ability to produce around 350 million liters, the potential of bottled wine imports remains around 400 million liters (having invariant economic background).

## 2.4.2 Structure and dynamics of imported wine market. Italy's place in wine imports.

For the purpose of further detailed consideration of the structure of Italian wine imports to Russia, it is important to assess Italy's place in the total wine imports, as well as its structure in comparison with other exporting countries. Since 2012, Italy has consistently ranked first in bottled wine imports to Russia both in volume and monetary terms. Against this background, France, which did not concede the leading position to Italy in liters in 2012, by 2020 dropped to third place. Spain has been in second place in terms of volume since 2015. The other countries of the leading six (they together held about 25% of the market in volume and 70% in value terms in 2020) were noticeably behind. Germany has been consistently losing ground to Chile and Portugal. The latter, however, very seriously strengthened its position by 2020. Imports of Chilean wines are stable at the same level against the growth of the leaders.

Figure 2.24: Wine imports to Russia by 6 best exporter country, volume.



Source: author's elaboration of customs data archive of Arsenal LLC[42].

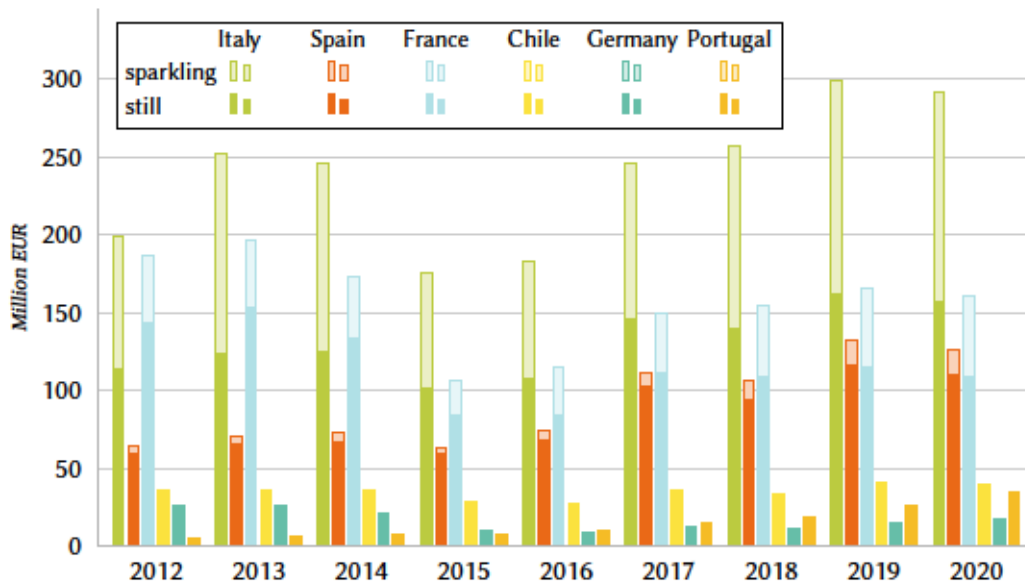
In monetary terms, the closing three behaved about the same as in terms of volume, but the situation of the first three countries is radically different. Italy is still the leader. France gave up a lot in volume, but is still second by 2020. However, Spain has grown a lot by 2020 compared to the beginning of the period and is already on par with France in terms of the



amount of imports of still wines.

The ratio of sparkling and still wines in imports is a separate important topic. Italy is an absolute leader by volume indicators (in 2020 it is 77% of imports of sparkling wines in Russia). France and Spain provide the rest in the amount of 22%. These three countries determine the market of imported sparkling wines in Russia. In terms of money the picture is slightly different, because of more expensive champagne France has a larger share (25%), and the share of Italy is smaller (66%). In the segment of still wines, Italy loses to Spain in volume,

Figure 2.25: Wine imports to Russia by 6 best exporter country, value.



Source: author's elaboration of customs data archive of Arsenal LLC[42].

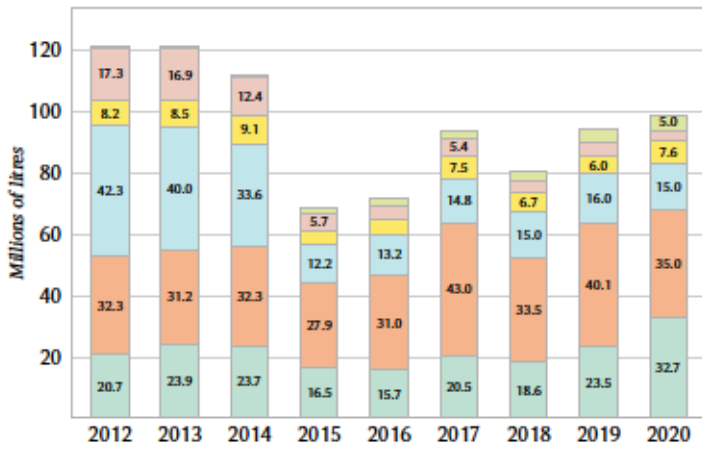
but is ahead in value. France has seriously lost in both volume and value of imports over the period under review. In volume, it is third, and in monetary terms ahead of Spain by half in 2012, France shares second place with it in 2019–2020.

The correlation of volume and value charts suggests a heterogeneous distribution of import volumes by price segment. To analyze the situation, charts of import dynamics for the top six countries in four price ranges were prepared (see Figure 2.26). For further correlation with the Shift-share analysis results, the same ranges were used as in Section 3.4, and the reasons for the choice of range boundaries are given there as well. So, the Low-cost segment includes wines with customs values from €0 to €2.1 inclusive, Entry level from €2.1 to €3.1 inclusive, Middle range from €3.1 to €4.5, and Premium over €4.5.

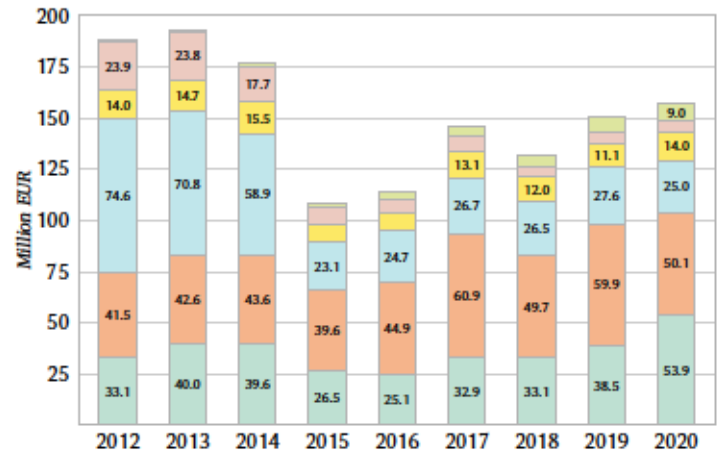
Between 2012 and 2018, Spain was the clear leader in the Low-cost segment, both in volume and money. From 2019 there is a positive trend, and in 2020 Italy came out on top in imports of low-cost wines. On the one hand, apparently, there was the effect of a COVID-19 year and a local drop in the entry level category. On the other hand, it can be assumed that the direct import activity of off-trade chains has begun, which has affected the shift in focus.

In the segment in question, France dictated the market conditions until 2014, after which the picture changed radically. The author was a direct participant in the market and in my

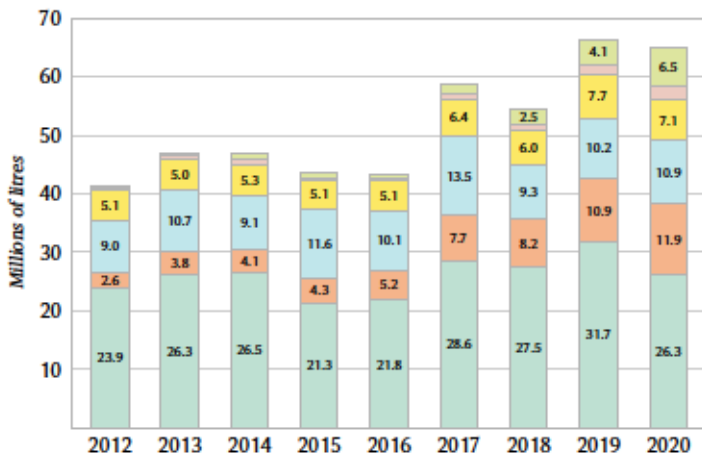
Figure 2.26: Import dynamics for the top six countries in the four price ranges.



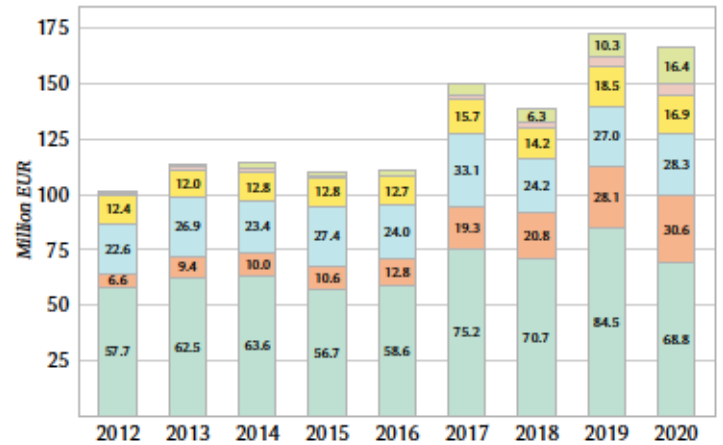
(a) Low-cost, Volume



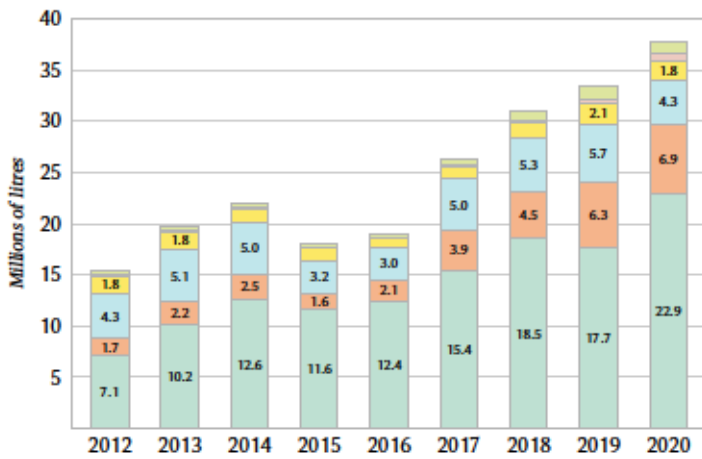
(b) Low-cost, Value



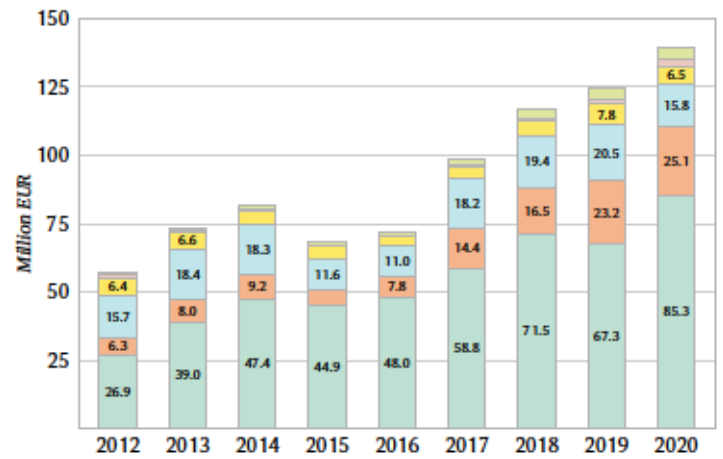
(c) Entry level, Volume



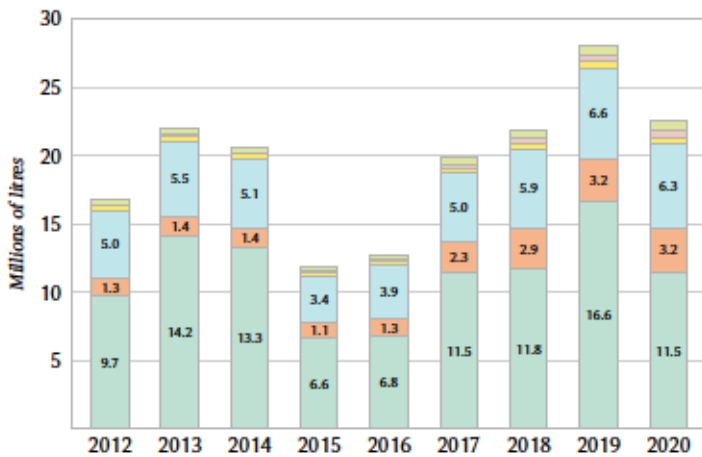
(d) Entry level, Value



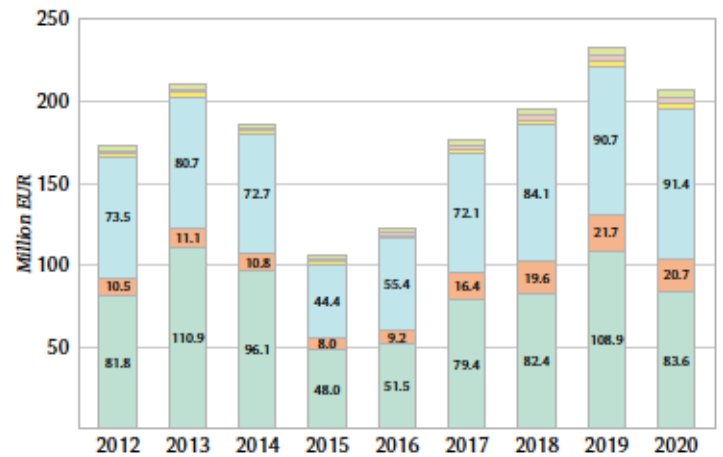
(e) Middle range, Volume



(f) Middle range, Value



(g) Premium, Volume



(h) Premium, Value

Source: author's elaboration of customs data archive of Arsenal LLC[42].

Italy Spain France Chile Germany Portugal

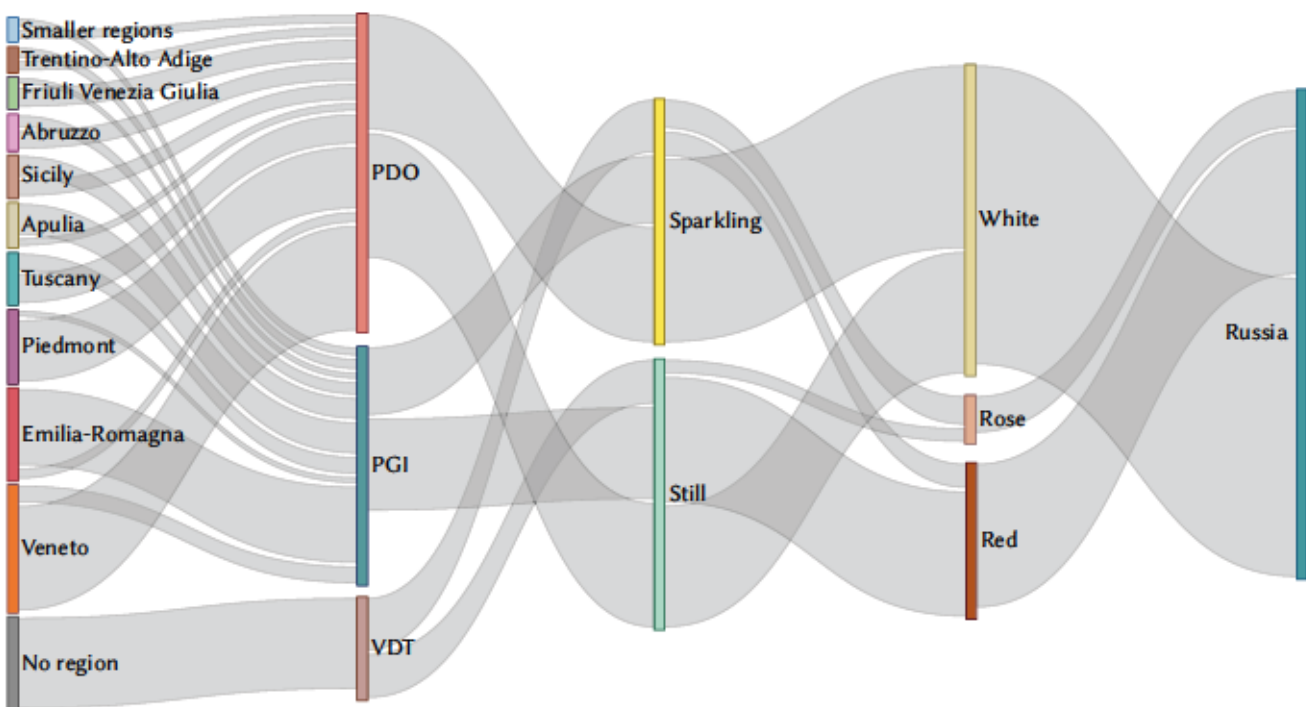
expert opinion the main reason was the increase in prices for basic châteaux wines, which in 2015 lost their attractiveness due to the growth of the euro exchange rate and EXW prices.

Entry level and Middle range are the domination zone of Italy. And if in the first category the volume of imports was quite stable, in the middle segment Italy is actively growing. Spain and France are lagging far behind. In the last couple of years, Portugal has appeared on the horizon and has almost reached 4<sup>th</sup> place. In the Premium segment, the situation is different. In fact, there are only two countries in the race — Italy and France. Although, the share of Spain in recent years has become noticeable against the general background. In 2020 the average cost of a liter of Italian wine in this group was €7.27, while the French — €14.52. Hence the equality between the import figures of these countries in monetary terms and the approximately twofold difference in volumes in favor of Italy.

Summing up the analysis of imports by price range, we note that Italy is strong in the Medium-Premium range, with an increase in the Low-cost and Medium-range segments over the period since 2015 with dynamics higher than the other countries.

Analysis of the structure of Italian wine imports to Russia (in volume terms) by the example of 2019 is shown in Figure 2.27. The year 2019 is chosen because it was a period of balanced market development before the COVID-19 restrictions. The leading region is Veneto, taking

Figure 2.27: Structure of Italian wine imports to Russia (in volume terms) in 2019.



Source: author's elaboration of customs data archive of Arsenal LLC[42].

23% of the total volume. Emilia-Romagna and Piedmont are also markedly different. These three regions together accounted for more than half of total imports into Russia. The PDO category prevails over the others (just over half of the total), with Veneto and Piedmont again making the main contribution. In the PGI category Emilia-Romagna is the leader, primarily

due to Lambrusco. Table wines have a noticeably smaller share of total imports - only 18%. Note that the PDO category is divided in half into still and sparkling wines. In the PGI category, still wines have a slightly higher share (58%).

Sparkling wines are only slightly behind still wines in total imports (42 to 47 million liters). As we saw in the Figure 2.26, this characteristic makes a key difference for Italy compared to other exporting countries. White wines with a significant preponderance (thanks to sparkling wines, primarily Prosecco and Asti) lead in total imports making 64%. If we talk separately about still wines, then red and white wines have parity with 3% for rosé wines. They are not very popular yet in Russia. Red wines predictably consist of 85% still wines, with the remaining 15% coming almost entirely from Lambrusco from Emilia-Romagna. Lambrusco rosé occupies one-third of the entire category of rosé wines.

### 2.4.3 Overview of wine market regulation, key events.

The dynamics of wine imports to Russia in the period 2012-2020 was influenced not only by the economic situation, but also by the state regulation of the market. The alcoholic beverage industry has historically attracted a lot of attention from the government. Obviously, the government was primarily interested in vodka as the national alcoholic beverage, which is the basis of alcohol consumption (60% in 2012, see Section 2.4.1).

Therefore, wine rather “suffered” from regulation along with vodka. At the same time, for a long time - until the end of 2019 - there was no law regulating the concept, classification and key parameters of wine and wine products. That is, wine could often be called something that contained in its composition not only the products of the fermentation of grape must. Let’s list the main stages of changes in the system of regulation of the import and sale of alcohol in Russia.

1. December 2008 — Federal Service for Alcohol Market Regulation (FSRAR) has been established. The procedure for obtaining licenses for the purchase and wholesale sale of alcohol has been made more complicated.
2. December 2009 — excise taxes on vodka were increased.
3. December 2010 — regulation of the minimum prices for vodka and spirits was introduced.
4. July 2011 — introduction of restrictions in the points of sale and consumption of alcoholic beverages, limiting the hours during the day for buying alcohol, increase of the minimum required area of trade facilities.
5. November 2011 — excise taxes were raised by an average of 15-18%.
6. June-July, 2012 — additional restrictions on advertising of alcoholic beverages (banning advertising in the press, on the radio and on TV), wine is equated with alcoholic beverages.
7. December 2015 — reduced excise rates for wines and sparkling wines with protected geographical indication, with protected appellation of origin.

8. January 2016 — Unified State Automated Information System (EGAIS) was introduced in the wholesale trade.
9. October 2018. — Fully implemented bottle-by-bottle accounting of products in EGAIS by double scanning at a cashier desk.

Given the imbalance in consumption in favor of vodka and the presence of counterfeit products on the market, the measures taken can be considered progressive. And indeed, as we saw in Section 2.4.1 the consumption of vodka dropped almost 2 times. But the introduction of EGAIS was accompanied by huge problems of implementation of this project, importers could not get excise stamps and import the goods for several months after the system was launched. This explains the collapse in the volume of imports in 2016, when logically, with the falling euro, the volume of imports should have been increasing.

A similar situation occurred in 2018, when the control system covered the entire cycle and every bottle of wine and spirits had to be barcoded, entered into a computer database and tracked all the way to the retail sale in a store or restaurant. Numerous retailers suffered from this, and again the implementation was poorly organized, which contributed to the failure of imports. With a fairly stable European currency exchange rate, 2018 repeated the result of 2017. In both situations, a troubled year was followed by significant growth - this was the case in 2017 and in 2019.

# Chapter 3

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## Methodology

### 3.1 Methodology overview.

An analysis of the dynamics of Italian origin-controlled wine exports into Russia consists of several stages. First, the widespread database at the author's disposal requires extensive revision, since in its original form the data do not explicitly contain information on the parameters necessary for classification. The Section 3.2 describes the approach to data extraction and processing. Particular attention is paid to the analysis of the sources of errors in completing the customs declarations.

An important preparatory stage before performing Shift-share analysis is the structuring of the exported wines array by price. The author proposes a variant of formalizing the boundaries between the groups, with justification by statistical data, broken down by narrow price segments.

In the final Section 3.5 the application of static and dynamic SSA to analyze the dynamics of the formed assortment groups is disassembled. The theoretical side of the question is presented and the formulas used are explained. It is shown step by step how the intermediate and final results by regions were obtained.

### 3.2 Sources and description of data.

#### 3.2.1 Description of the main database, the structure of the information.

The basis for the study in this paper is an extraction from the database of the Russian Customs Service, kindly provided to the author by the Limited Liability Company "Arsenal" [42]. The data are provided in *Microsoft Excel* spreadsheets and contain information on imports of alcoholic beverages into Russia from 2012 to 2020.

Data for each year are prepared in separate files, each of which contains information ordered by rows. Depending on the year, the volume of data differs and includes up to 170,000 lines (about 150 Mb) for one year. Let's consider the data structure.

A unique data line is determined by the number of the customs declaration issued for the goods imported into Russia and the name of the imported goods [43]. Each line includes several dozens of fields, including those with service data that are not of interest for the study. The fields with significant information that are used for this work are presented in detail in the Appendix A. It gives the names of the fields, their possible meanings and variant uses for the

current research.

The first block of data contains information about date, issuing authority and direction of movement of goods. The second one concerns exporters and importers, information about them and the contract under which they operate. The most valuable fields contain the details about shipper's address and currency exchange rate as of the date. The first of these fields is more of an aid to verifying the region of production. The first of these is more of an aid to verifying the region of production. Information on the exchange rate, on the other hand, is key to determining the value group for imported wines.

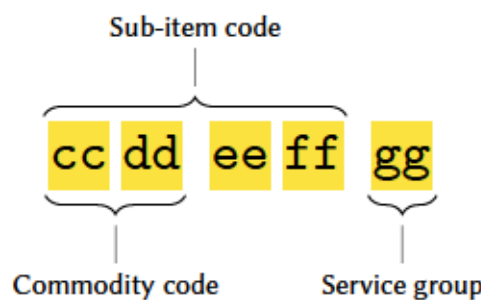
The third block contains detailed information about a specific imported wine according to the customs regulation. They are Product and Manufacturer's names, HS code (described in the Section 3.2.2), Customs value and Quantity of goods. All these essential data are the basis for the compilation of the tables used in the SSA study.

### 3.2.2 Tuning up primary information and preparing it for SSA application.

In the initial state, the data from the tables are not suitable for analysis. The author has done a lot of work to refine the information from the original databases and to extract non-obvious information.

One of the main sources of data is the *HS code*. This is a classification of all goods, fundamentally involved in foreign trade developed by the World Customs Organization (WCO). It is a multipurpose nomenclature used by more than 200 countries and Customs or Economic Unions as the basis for customs tariffs and for the compilation of international trade statistics [44]. Its structure is shown in the following Figure 3.1.

Figure 3.1: WCO HS code structure.



Source: European Customs Portal [45].

The HS code is a hierarchical structure. There are twenty one sections at the highest level of the classification. Each section has up to 14 chapters. Wine, together with foodstuffs and other beverages, is in Chapter 22 of Section IV. Thus, the first two characters *cc* of the HS code for the goods under research are 22 i.e. *beverages, wines, spirits and vinegar*. Then, the first four characters together form the commodity code. 22 04 corresponds to *wine of fresh*

*grapes, including fortified wine*. The four digits *ee ff* are responsible for the next level, together with *cc dd* they constitute a sub-item code. The last *gg* values are usually used as auxiliary or service digits. Hence, the 8 characters are enough to get the full necessary information.

The second four *ee ff* (see Table C.1) encodes the type of wine GI (VDT, PGI and PDO), some particular GI appellations, color, bottle/container volume and level of alcohol. Unfortunately, the capacity of the codes is not fully utilized. Therefore, the HS code is not a perfect tool to unambiguously determine the region and GI type. So, in the research it is used only in conjunction with the data from other fields of elaborated customs statistics database.

The technique for obtaining fields for the pivot tables that will be used later for SSA is set out in detail in the Appendix B. Some of the fields are used as they are, while others are subject to further processing, filtering and comparison with reference data.

The simplest method of extracting information is to match the data in the fields of the customs declaration directly to the required parameters. An example would be a white wine from the HS code field or a wine belonging to one of several wine regions (see table). With the exception of a few GI codes where PDO and PGI are mixed, it is also possible to unambiguously determine the level of classification. As the HS code does not distinguish between red and rosé wines, an additional field for checking is the Name, in which, in the vast majority of cases, the color is explicitly stated. The Name can also be used to verify whether the HS code is correctly mapped to the white wines.

It is also not a difficult task to build up a table of dates and Euro exchange rates as of [24]. As the currency of the contracts may vary (euro, dollar, ruble, Swiss frank etc.), all price data should be converted to euros for harmonisation purposes.

The most time consuming part of preparing the data for further use is the extraction of regional information. As mentioned above, part of this data is collected from the HS code field. However, this is not sufficient for a complete picture. In order to get a full description, the field Name was checked carefully, as often the information about the region is not specified directly (e.g. sub-region), sometimes it is abbreviated or spelled in Latin or Cyrillic characters. All these factors were taken into account by the author when compiling tables of matching words and phrases from the Name field with the regions, see Appendix C, Table C.4.

The formation of SSA categories, which constitute a composite field, also deserves special attention. The first part contains the color and the group (e.g. white still wine). As far as the price is concerned, all the wines in question are divided into groups according to the following rule based on the customs value:

$$\begin{aligned}
 P_L \in (\text{€}0.0, \text{€}2.1] & \quad \textit{low - cost}, \\
 P_L \in (\text{€}2.1, \text{€}3.1] & \quad \textit{entry level}, \\
 P_L \in (\text{€}3.1, \text{€}4.5] & \quad \textit{middle range}, \\
 P_L \in (\text{€}4.5, +\infty) & \quad \textit{premium},
 \end{aligned} \tag{3.1}$$

where  $P_L$  is Price per liter value.



**Table 3.1: Sub-item HS code explanation.**

ee ff	GI	Description
10 XX		Sparkling wines with a bottle pressure of >3 bar. <b>White, rosé and red, any volume.</b>
10 91	PDO	The exclusive code for <b>Asti Spumante</b> . The only Italian sparkling wine defined unequivocally. <b>Piedmont region. White.</b>
10 93	PDO	Includes <b>Franciacorta, Prosecco</b> . They are combined in the same code and are not uniquely defined by the HS code.
10 94	PGI	For example <b>Lambrusco</b> . Also, this code is used for many other sparkling PGI wines PGI.
10 96		
10 97	VDT	Sparkling wines with a region of origin Italy.
10 98		
21 06	PDO	Semi-sparkling wines $\leq 2l$ (bottle pressure $\leq 3$ bar). <b>White, rosé and red.</b> Typical examples: <b>Moscato d'Asti, Prosecco Frizzante.</b>
21 07	PGI	Semi-sparkling wines $\leq 2l$ (bottle pressure $\leq 3$ bar). <b>White, rosé and red.</b> A typical example is <b>Lambrusco.</b>
21 08	VDT	Semi-sparkling wines $\leq 2l$ with a region of origin Italy (bottle pressure $\leq 3$ bar). <b>White, rosé and red.</b>
21 09		
21 XX		Still wines (except 21 0X). Unlike sparkling wines (10 XX), color, volume, and alcohol content are determined by additional codes.
21 24	PDO	<b>Lazio, white wines <math>\leq 2l, \leq 15\%</math> alc.</b>
21 26	PDO	<b>Toscana, white wines <math>\leq 2l, \leq 15\%</math> alc.</b>
21 27	PDO	<b>Trentino, Alto Adige, Friuli, white wines <math>\leq 2l, \leq 15\%</math> alc.</b>
21 28	PDO	<b>Veneto, white wines <math>\leq 2l, \leq 15\%</math> alc.</b>
21 31	PDO	<b>Sicily, white wines <math>\leq 2l, \leq 15\%</math> alc.</b>
21 38	PDO	Regions other than Lazio, Toscana, Trentino, Alto Adige, Friuli, Veneto, Sicily, <b>white wines <math>\leq 2l, \leq 15\%</math> alc.</b>
21 61	PDO	<b>Sicily, red and rosé wines <math>\leq 2l, \leq 15\%</math> alc.</b>
21 62	PDO	<b>Piedmont, red and rosé wines <math>\leq 2l, \leq 15\%</math> alc.</b>
21 66	PDO	<b>Tuscany, red and rosé wines <math>\leq 2l, \leq 15\%</math> alc.</b>
21 67	PDO	<b>Trentino, Alto Adige, red and rosé wines <math>\leq 2l, \leq 15\%</math> alc.</b>
21 68	PDO	<b>Veneto, red and rosé wines <math>\leq 2l, \leq 15\%</math> alc.</b>
21 78	PDO	Regions other than Sicilia, Piemonte, Tuscany, Trentino, Alto Adige, Veneto, <b>red wines <math>\leq 2l, \leq 15\%</math> alc.</b>
21 79	PGI	<b>White wines <math>\leq 2l, \leq 15\%</math> alc.</b>
21 80	PGI	<b>Red and rosé wines <math>\leq 2l, \leq 15\%</math> alc.</b>

(Continued on next page)

Table 3.1 continued.

ee ff	GI	Description
21 81	VDT	White wines $\leq 2l$ , $\leq 15\%$ alc.
21 83		
21 82	VDT	Red and rosé wines $\leq 2l$ , $\leq 15\%$ alc.
21 84		
21 90	PDO/PGI	White, rosé and red wines $\leq 2l$ , $> 15\%$ alc. Typical HS code for Amarone.
21 91	VDT	white, rosé and red wines $\leq 2l$ , $> 15\%$ alc.
22 10	VDT	Semi-sparkling wines $> 2l$ but $\leq 10l$ (bottle pressure $\leq 3$ bar). White, rosé and red.
22 XX		Still wines (except 22 10) $> 2l$ but $\leq 10l$ .
22 18	PDO	White wines $> 2l$ but $\leq 10l$ , $\leq 15\%$ alc.
22 58	PDO	Rosé and red wines $> 2l$ but $\leq 10l$ , $\leq 15\%$ alc.
22 79	PGI	White wines $> 2l$ but $\leq 10l$ , $\leq 15\%$ alc.
22 80	PGI	Rosé and red wines $> 2l$ but $\leq 10l$ , $\leq 15\%$ alc.
22 83	VDT	White wines $> 2l$ but $\leq 10l$ , $\leq 15\%$ alc.
22 84	VDT	Rosé and red wines $> 2l$ but $\leq 10l$ , $\leq 15\%$ alc.
22 90	PDO/PGI	White, rosé and red wines $> 2l$ but $\leq 10l$ , $> 15\%$ alc. Typical HS code for Amarone.
22 91	VDT	White, rosé and red wines $> 2l$ but $\leq 10l$ , $> 15\%$ alc.
29 05	VDT	Semi-sparkling wines $> 10l$ (bottle pressure $\leq 3$ bar). White, rosé and red.
29 XX		Still wines (except 29 05) $> 10l$ .
29 18	PDO	White wines $> 10l$ , $\leq 15\%$ alc.
29 58	PDO	Rosé and red wines $> 10l$ , $\leq 15\%$ alc.
29 79	PGI	White wines $> 10l$ , $\leq 15\%$ alc.
29 80	PGI	Rosé and red wines $> 10l$ , $\leq 15\%$ alc.
29 81	VDT	White wines $> 10l$ , $\leq 15\%$ alc.
29 82	VDT	Rosé and red wines $> 10l$ , $\leq 15\%$ alc.
29 90	PDO/PGI	White, rosé and red wines $> 10l$ , $> 15\%$ alc.
29 91	VDT	White, rosé and red wines $> 10l$ , $> 15\%$ alc.

Source: author's elaboration of customs data archive of Arsenal LLC[42], European Customs Portal [45].

The reasons for determining the price ranges are explained in the Section 3.4.

The Appendix C contains as a sample an extract from the data prepared for analysis (see Table C.2) in which the original fields are labeled cyan, the calculated and added fields are highlighted in light orange.

### 3.3 Data reliability, quality and faults of data.

#### 3.3.1 The quality of raw data, the methods of improvement used.

The quality of the customs data [42] is determined by the quality of the declaration fields filled out by customs brokers and the degree of data verification by Russian Federal customs officials. Some indicators affect the accrual of excise taxes and customs duties. These are the group of drinks (still wine, sparkling wine, spirits), the level of alcohol and, of course, the amount of imports. Accordingly, the control of the HS code assignment is quite serious. For erroneous provision of data there is administrative responsibility in the amount of half to twice the amount of duties and taxes payable with possible confiscation of goods [koap]. Nevertheless, for HS codes on wine in terms of allocation to the GI type, region, color errors are more likely, since they do not affect the amount of customs and excise duties.

To avoid errors in assigning wine to a particular type and their impact on the results of the study, an additional control is applied using data from the field Product Name (G31\_1). By means of the formulas, the required values are extracted and then compared with the corresponding fields. The method of control showed its effectiveness and allowed to identify errors, which, however, could not significantly affect the results of the study. Table 3.2 shows the frequency of faults for the GI\_HS, Color\_HS, and Group\_HS fields for 2015 and 2020. As we can see, the faults level in the raw data for these parameters did not exceed tenths of a percent.

Table 3.2: Examples of HS faults, liters.

	2015			2020		
	GI_HS= VDT	Color_HS= White	Group_HS= Still	GI_HS= VDT	Color_HS= White	Group_HS= Still
<b>Faults</b>	28,926	438	14,946	22,305	89,283	128
<b>Total</b>	14,010,355	19,068,863	29,675,582	15,327,283	33,490,574	50,086,079
<b>%</b>	0.2065%	0.0023%	0.0504%	0.1455%	0.2666%	0.0003%

Source: author's elaboration of customs data archive of Arsenal LLC[42].

A slightly different situation is observed with the quality of the G31\_1 field containing GI, region, and color data. Since this information should in principle be entered in each line of

the declaration, but does not affect the calculation of customs and excise duties, attention to the control of correctness of this field is probably not as serious. As an example, consider the presence frequency of three parameters in the G31\_1 field of the 2020 data (see Table 3.3). The information on color is most complete, the rows without this data do not exceed 0.2% of the total volume in terms of liters. Data on GI are missing in 3.3% of the total volume.

At the same time, data on the region are entered significantly worse, and almost 15% of the data in the G31\_1 field have no direct indication of the region. Part of the information (about 2%) is compensated by the HS code data, while the rest has to be clarified with the manufacturer's address data (this can be done automatically, allowing to get about 8% more data) or by analyzing the data about the company-manufacturer and trademark. To do this, we need to identify similar wines and use information about the region of them. This work was done manually, taking in account the complexity of automation algorithms. For example, there are 35,896 lines in the Italian wine data (commodity code 22 04) for 2020. After applying the available automated processing, 1,489 rows were left without an explicit region. Further, manual refinement was carried out until the error did not exceed 1% of the total volume of the wines in question in liters.

**Table 3.3:** *Frequency of GI, region and color data presence in the G31\_1 field for 2020.*

	PDO/PGI	GI_name	Region_name	Color_name
<b>Liters</b>	77,984,708	75,437,515	66,551,677	77,823,180
<b>Share</b>	100.0%	96.7%	85.3%	99.8%

**Source:** author's elaboration of customs data archive of Arsenal LLC[42].

As noted in the previous section, the most accurate information about G42 invoice prices is not fully represented in the raw data. Therefore, the G45 field was used to address the issue of forming price groups for the SSA study. This is the customs value in rubles, which is used to calculate customs duties. This value includes the cost of delivery to the consolidation warehouses or customs warehouses of importers. To estimate the share of logistics we used the data, kindly provided by Arsenal LLC on the delivery of a Prosecco lot from Treviso to a bonded warehouse in the territory of Russia. The cost of shipping 16,800 bottles by standard truck was €3,500, which in per liter terms equals €0.28. The cost is influenced by the size of the shipment, the location of the shippers, the specifics of the transport company. Therefore, it is not possible to separate the cost of delivery from the total customs value G45. When analyzing, it is necessary to keep in mind that the error level of the price per liter represents the value specified above.

### 3.3.2 Peculiarities of the original data taken into account during their processing.

Many problems in processing the original information are caused by filling the fields of declarations in Russian. Transliteration from the Latin alphabet is not standardized, which leads to a lot of variants of GI and Regions writings. In addition, often the field G31\_1 is filled in a mixture of Cyrillic and Latin letters, which must also be taken into account in the algorithms of selection and verification (see 5. (ii) of the previous section).

At the same time, the presence of duplication makes it possible to check, fill in the missing data and, as a result, improve the quality of information. For example, data on the region of origin can be found in the HS code, the name of the wine, the address of the manufacturer, and also indirectly in the name of the producer and the brand name.

In a sense, the data quality could be improved by making complete use of the HS codes capabilities. For example, the HS code 2204 1015 00 according to the European requirements corresponds to Prosecco [45], but in Russia for some reason this code is not used. The last two digits of the HS code also carry considerable capacity for a more complete classification. They could be used to designate the main wine regions (for the 2204 2178 00 code that is used for red and rosé PDOs without region indication or 2204 2138 00 code for whites). It would also be useful to divide by service codes sparkling wines with different pressure levels, which would allow a clear analysis of *frizzante* wines.

During data processing, there was also evidence of dishonest completion of data on wine imported for non-commercial purposes. Virtually no information was entered in the Product Name (G31\_1) field. Another problem is the low quality of filling out data on wines in large-volume packages (over 2 liters), where the only HS code is used for many possible variants. Due to the small volume in liters, these errors are not critical for the purpose of present study.

## 3.4 Price ranges determination.

As will be discussed later, SSA implies a three-dimensional data structure, and for the purposes of this paper it was important to determine which indicator along with the time scale (years) and regional coordinate would be used for the analysis. The solution was to create a synthetic criterion by combining the key characteristics of any wine, namely color, group (still/sparkling) and price range. We were able to form the first two parameters using data from customs statistics fields. The most important role in giving completeness to the created design is played by the last parameter. In the practice of wine trade the terms “basic” or “entry level” wine, “medium range”, “premium” wine are regularly used. It was important to formalize the principles of dividing these ranges by defining clear boundaries between the groups.

As there is a long period of time under consideration, it is entirely possible that prices could have changed over a period of 9 years due to inflation or market conditions. Obviously, the study of such an issue is a topic for a separate large study. The situation is complicated by the

fact that for a qualitative analysis it is necessary to investigate the prices for identical wines during the whole period of time.

However, suppliers were not always present in the market for the entire time period. In addition, the names of wines and their market positioning may have changed, and tools for unambiguous comparisons of imported wines (for example, they could be EAN codes) are not available. In order to assess the influence of this factor, several wine positions known to the author as regularly present in the market and not changing their positioning were used. The names of wines and producers cannot be pronounced due to restrictions on the use of information from Arsenal LLC. Therefore, the wines are depersonalized and the information is given only about the dynamics of their customs value for 9 years.

The price of the items in question varied unevenly over the period under consideration, but the general upward trend is noticeable — the increase ranged from 8 to 15%. The average values, standard deviation and coefficients of variation are given in the Table 3.4. In the top two rows there are traditional Pinot grigio and coupage red PGI from Veneto. The price for both was stable for 5 years, and then increased for the year. This change in nature is similar to the price increase in the supplier’s price list due to market conditions. The second pair of wines

**Table 3.4:** *Dynamics of customs value for selected wines, euro.*

Type	GI	2012	2013	2014	2015	2016	2017	2018	2019	2020	AVG	SD	CV
White	PGI	3.43 <sup>a</sup>	3.47	3.45	3.47	3.45	3.56	3.75 <sup>b</sup>	3.69	3.72	3.55	0.13	3.7%
Red	PGI	6.74	6.59	6.59	6.59	6.59	6.52	6.92	6.92	6.92	6.71	0.17	2.5%
Red	PDO	2.38	2.38	2.45	2.56	2.67	2.70	2.66	2.75	2.70	2.58	0.15	5.6%
Sparkling	PDO	4.33	4.23	4.27	4.33	4.35	4.59	4.61	4.57	4.55	4.43	0.15	3.4%

<sup>a</sup>blue color denotes minimum value in the range, <sup>b</sup>red color denotes maximum value in the range.

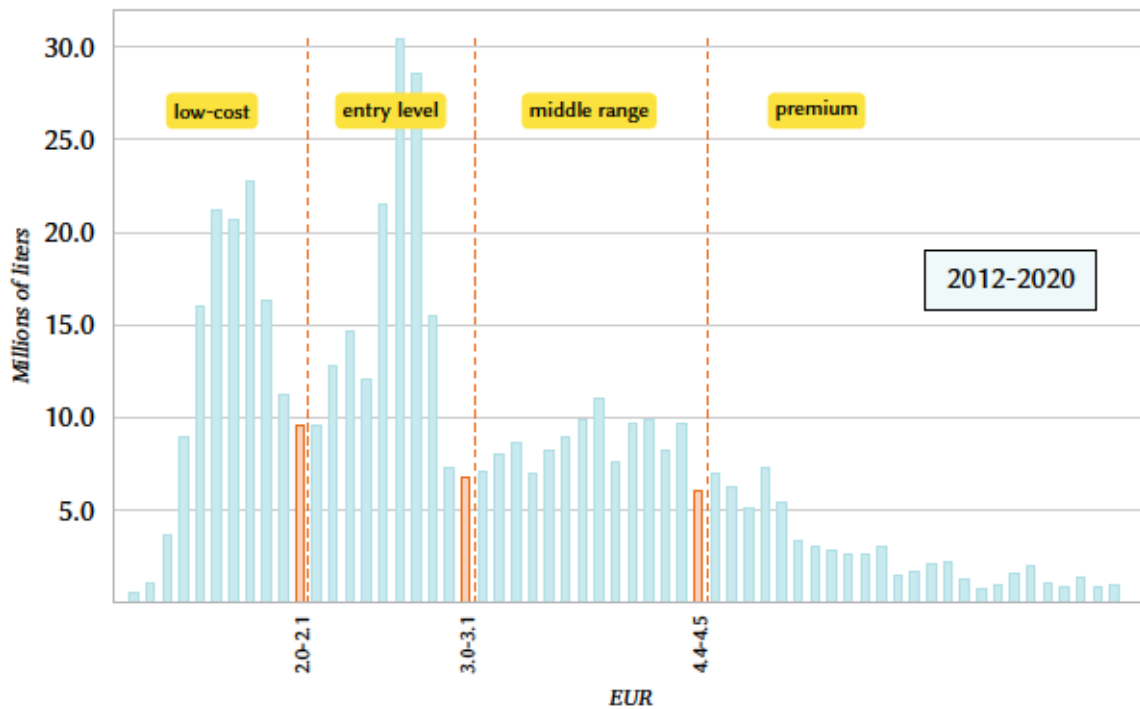
**Source:** author’s elaboration of customs data archive of Arsenal LLC[42].

represents the PDO category wines — the first is Chianti and the second is standard Prosecco. The changes here have been gradual, with the sparkling even undergoing a correction in the last couple of years.

In any case, even by these examples it is clear that the task of bringing the array of information to unified prices is versatile and could be an interesting continuation of this study. In fact, the price fluctuation has led to a blurring of the boundaries between the ranges under study. The order of “interpenetration” of the ranges into each other can be compared with the level of coefficients of variation on the presented items.

As a result, the determination of the ranges for SSA was carried out by analyzing charts of the imports volume distribution by ten euro cents segments. In order to identify patterns, year-by-year charts were generated and their finally superposition was performed.

The result is shown in Figure 3.2. The charts for individual years can be viewed in Appendix E.

**Figure 3.2:** Imports volume distribution by price segment, mln liters.

Source: author's elaboration of customs data archive of Arsenal LLC[42].

On the final chart, as well as on some yearly charts, 3 peaks are noticeable. The first two of them around €1.7 and €2.7 points are clearly pronounced, the third one near €4.5 is flatter. The boundaries of the ranges for consideration are drawn at local lows, namely at €2.1, €3.1, and €4.5 (see Figure 3.2). In the fourth group (prices above €4.5) the values of each segment are small in comparison with the maximum ones, but due to the “smeariness” of the range up the abscissa (in some years the maximum cost of a liter of imported wine can reach €800), the sum of liters is comparable to other ranges.

The Table 3.5 provides a breakdown of annual import volumes in accordance with the selected price ranges. The distribution of the ranges confirms the correctness of the chosen boundaries, since both negative and positive fluctuations are noticeable depending on the year. In addition, the ranges are commensurate in volume, which gives room for further analysis.

**Table 3.5:** Imports volume distribution by range, mln liters.

Price range	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
(0.0-2.1]	10.883	14.192	14.817	10.300	10.621	15.114	14.293	16.926	25.102	132.248
(2.1-3.1]	13.499	15.339	16.311	13.612	14.167	21.102	20.568	23.783	20.938	159.320
(3.1-4.5]	6.741	9.611	11.976	11.232	11.667	14.712	16.901	16.528	20.864	120.231
>4.5	9.385	13.660	12.820	6.335	6.436	10.902	11.286	15.760	11.080	97.664
	40.508	52.801	55.924	41.478	42.891	61.829	63.048	72.997	77.985	509.462

Source: author's elaboration of customs data archive of Arsenal LLC[42].

As a result of all the preliminary transformations and processing, we obtained the distribution of the entire volume of imports by year, region and SSA category. The latter are composed of two groups of wines — still and sparkling wines, still wines are subdivided into reds, rosé and whites. By adding the price criterion, we ended up with 16 groups for analysis. The full picture is available in Appendix C.

## 3.5 Shift-share analysis approach used.

### 3.5.1 Literature review

Before turning to the Shift-share (SSA) methodology applied in this paper let's provide a detailed literature review on this approach, describing the characteristics of each its type. SSA is a recognized analytical tool for regional economic analysis. The methodological basis consists in fixing the proportions of growth (decline) of economic sectors relative to the economy as a whole and relative to a selected spatial level: country, macro-region, region.

SSA has been in use for more than 60 years, thus presenting a rare case of how, despite the tremendous development of computing technology over this period, it has lost none of its attractiveness, but has rather gained many new colors and become the basis for new methods such as structural decomposition analysis [46].

Shift-share analysis was first proposed in the early 1940s in the work of D. Creamer [47]. The method was further formalised in 1960 in Edgar S. Dunn's paper "A statistical and analytical technique for regional analysis" [48]. The popularity of the method is confirmed by the fact that this paper has been cited in publications more than 800 times [46].

SSA was originally used as a method to study regional growth, decline and comparison. The decomposed variable was usually income, employment, value added, number of enterprises, and so on. The essence of the original method is to break down the growth rate into a structural and a "competitive" productivity component. The original Shift-share equation decomposes any sectoral growth rate into three components: the growth effect relative to the base area, which in regional use cases is usually the national economy, the structural effect and the competitiveness factor. It is precisely the latter component that indicates the relative competitive advantage or disadvantage of a particular regional sector:

$$EC = NS + IM + RS, \quad (3.2)$$

where EC is *Economic Changes* (usually in value or volume terms). NS, IM and RS refer to the *National Share*, *Industrial Mix* and *Regional Shift*, respectively.

Each of the addends in the right-hand side of the formula (4) is expressed through the sum of the products of the economic variable's initial value of sector  $i$  in region  $r$  ( $P_{irt}$ ) and three growth/decline coefficients. The first of them  $g_n$  characterises the degree of change in the national economy as a whole, the second  $g_{in}$  shows how much the change in sector  $i$  is ahead/behind the dynamics of the national economy, the third  $g_{ir}$  characterises whether the



dynamism of the sector  $i$  in the region in question is faster or slower the dynamism of the sector  $i$  at the national level:

$$\Delta P_r = \sum_i P_{irt} g_n + \sum_i P_{irt} (g_{in} - g_n) + \sum_i P_{irt} (g_{ir} - g_{in}), \quad (3.3)$$

$$g_n = \frac{P_{nT} - P_{nt}}{P_{nt}}, \quad g_{in} = \frac{P_{inT} - P_{int}}{P_{int}}, \quad g_{ir} = \frac{P_{irT} - P_{irt}}{P_{irt}}, \quad (3.4)$$

where  $t$  and  $T$  are the start and the end years respectively.

Despite many uses of the original approach, the traditional SSA has been widely criticised. The main problem was that only the initial and final years were analysed, without taking into account changes within the period.

The next step was the dynamic SSA model. In 1988, Richard Barff and Prentice Knight published a description of it [49]. In contrast to the comparative static model, the dynamic model uses each year in the study period. However, much more data are required for the calculations, as the dynamic model takes into account continuous changes in the three components of SSA, so the choice of the start and end years has less impact on the results. The dynamic model is most useful when there are large differences between regional and national growth rates or significant changes in the regional industrial structure [49].

The dynamic model uses the same technique as the static one, involving the same three shift components. However, in the dynamic version we have a series of successive static calculations of the Shift-share and compare each year with the previous year. The paired year comparison effects are then summed over the entire study period:

$$\Delta P_r = \sum_t^{T-1} (P_r^{t+1} - P_r^t) = \sum_t^{T-1} \sum_i P_{ir}^t g_n^t + \sum_t^{T-1} \sum_i P_{ir}^t (g_{in}^t - g_n^t) + \sum_t^{T-1} \sum_i P_{ir}^t (g_{ir}^t - g_{in}^t), \quad (3.5)$$

$$g_n^t = \frac{P_n^{t+1} - P_n^t}{P_n^t}, \quad g_{in}^t = \frac{P_{in}^{t+1} - P_{in}^t}{P_{in}^t}, \quad g_{ir}^t = \frac{P_{ir}^{t+1} - P_{ir}^t}{P_{ir}^t}, \quad (3.6)$$

where the index of year  $t$  and the following year  $t + 1$  are introduced and, in addition to summing up by category, summing up by annual intervals is carried out.

A dataset obtained by year, sector and region, allows grouping in a different way. A number of papers such as [50] demonstrate several examples. Accordingly, the summation by category is not performed, but only by pairs of years. Therefore, we obtain a picture of dynamic SSA for the individual categories. The formula (3.5) takes the form:

$$\Delta P_{ir} = \sum_t^{T-1} (P_{ir}^{t+1} - P_{ir}^t) = \sum_t^{T-1} P_{ir}^t g_n^t + \sum_t^{T-1} P_{ir}^t (g_{in}^t - g_n^t) + \sum_t^{T-1} P_{ir}^t (g_{ir}^t - g_{in}^t), \quad (3.7)$$

As already noted, some disadvantage of the dynamic approach is the need to process times the volume of data. However, the development of computer technology and software since writing the paper in 1988 has almost completely eliminated this disadvantage. The availability

of statistical databases on various segments of the economy with up to a year's detail allows dynamic analysis to be carried out with reasonable ease. As the SSA method became more popular, the range of its application extended beyond the study of regional economy to include the study of commodity flows.

Examples of publications where both static and dynamic SSA methods were used include "Sources of regional inefficiency. An integrated shift-share, data envelopment analysis and input-output approach" [51] and "Analysis of import changes through Shift-share, location quotient and BCG techniques: Gwangyang Port in Asia" [52]. The first (a rather popular paper, 36 citations in Scopus) looks at efficiency in regional industry sectors through an analysis of the total number of workers employed in a sector over the course of a year. The industry structure of the state of Virginia in the US is analysed. Employment data from 1969 and 1992 were compared. It is demonstrated that in Virginia, five of the fastest growing industries in the state during this period matched the growing industries in the US as a whole (the exception is construction, here the state has an advantage over the country). The shrinking sectors were fully in line with national trends, characterising the state as highly responsive to changes on a national scale.

The second paper presents an example of a SSA's alternative use and analyses the change in imports of some commodities at the port of Gwangyang in Asia from 2010 to 2018 using static and dynamic SSA methods. In this paper, both approaches show a negative regional shift effect for coal and iron ore, but a positive one for natural gas and plant matter. It is also shown that Gwangyang Port has an advantage not only due to regional competitiveness, but also an advantage within the industry for iron ore, gas and plant material. The dynamic versus static analysis showed a greater impact of the regional component due to pronounced fluctuations in the period under consideration. The data for 2010 and 2018 are close in value, but there have been significant changes within the period. This is an important difference between the dynamic and the static approach. In my view, this paper is a good example that shows how Shift-share analysis can be successfully applied not only as a tool to research regional development, but also as a universal approach to studying changes in economic value in order to identify the internal structure and influence on the outcome of individual components.

Nevertheless, both static and dynamic SSAs have the disadvantage of not taking into account the influence of spatial indicators of regional growth. In the classical model we have considered only the extent to which a segment of the economy at the national level affects the regional level. In other words, the focus was on a particular region as an independent entity, and mutual influence of neighboring regions was not taken into account.

The importance of including spatial dependencies into SSA was first recognized by G.J. Hewings in [53], and only a long time later in 2004 he co-authored with S. Nazara the first spatial SSA [54]. The spatial framework takes into account the influence of neighbouring regions by comparing the growth rate of economic variable for a particular region to that of its neighbours. Nazara and Hewings [54] proposed 26 possible decompositions, giving the option to use any of them depending on the problem. For an example, the following expression was considered:

$$\Delta P_r = \sum_i P_{irt} g_n + \sum_i P_{irt} (\check{g}_{ir} - g_n) + \sum_i P_{irt} (g_{ir} - \check{g}_{ir}), \quad (3.8)$$

$$\check{g}_{ir} = \frac{\sum_s w_{rs} P_{isT} - \sum_s w_{rs} P_{ist}}{\sum_s w_{rs} P_{ist}}. \quad (3.9)$$

The second and third addends have been modified with respect to the (3.3). They are formed by replacing  $g_{in}$  with  $\check{g}_{ir}$ . Here  $w_{rs}$  is the element of row-standardized binary weight matrix  $W$  and measures the intensity of interaction between region  $r$  and neighbouring region  $s$  [55]. In other words,  $W$  is a matrix of regions' spatial relations, which defines their influence on each other:

$$W = \begin{bmatrix} 0 & w_{12} & \dots & w_{1N} \\ w_{21} & 0 & \dots & w_{2N} \\ \vdots & \vdots & \ddots & \vdots \\ w_{N1} & w_{N2} & \dots & 0 \end{bmatrix}. \quad (3.10)$$

The elements in each row must be calculated so that the sum of their weights equals one.

This matrix gives free rein to a researcher for defining method of mutual influence. Different sources suggest such variants as relative distances between administrative centers, existence and extent of a common border. Economic characteristics have also been used, i.e. the similarity of regions in terms of economic status, regardless of geographical location [56].

One of the most recent studies in the field of spatial SSA is the work of 2021 [57], where Geoffrey J. D. Hewings is again a co-author. It analyses spatial approaches used by various authors and proposes a new model for comprehensive analysis:

$$EC = (NTE + NIM + NCE) + (RIE + NRSE + RE), \quad (3.11)$$

$$\begin{aligned} \Delta P_r = & \sum_i P_{irt} \check{g}_r + \sum_i P_{irt} (\check{g}_{ir} - \check{g}_r) + \sum_i P_{irt} (g_{ir} - \check{g}_{ir}) + \\ & + \sum_i P_{irt} (g_{ir} - g_r) + \sum_i P_{irt} (g_r - \check{g}_r) + \sum_i P_{irt} (\check{g}_r - g_{ir}), \end{aligned} \quad (3.12)$$

Here NTE is the neighbourhood total effect. It measures the change observed in the economic variable  $P_r$  that can be attributed to the performance of the neighbours of region  $r$ .

NIM is the neighbourhood industry mix. It is the part of change explained by the sectoral structure of the neighbours of region  $r$

NCE is the neighbourhood competitive effect. It compares the growth of sector  $i$  in region  $r$  with that registered in its neighbouring regions.

RIE is the regional industry mix effect. It is the part of the change that is explained by the sectoral structure of the region  $r$ . RIE determines whether the region analysed has a comparative advantage or disadvantage in the sector  $i$ .

NRSE is the neighbourhood regional shift effect. It compares the growth rate of all sectors in the region  $r$  with respect to its neighbours. It evaluates whether the sectoral structure in the studied region has a relative strength or weakness compared to its neighbours.

RE is the residual effect.

The authors also introduce two new coefficients  $g_r$  and  $\check{g}_r$  in comparison to the formula (3.8). The first coefficient (3.13) is the growth rate of  $P_r$  in all sectors for the region  $r$ , while the second (3.14) one is the growth rate of  $P_r$  in all sectors in the neighbouring regions of region  $r$ .

$$g_r = \frac{\sum_i P_{irT} - \sum_i P_{irt}}{\sum_i P_{irt}}. \quad (3.13)$$

$$\check{g}_r = \frac{\sum_s \sum_i w_{rs} P_{isT} - \sum_s \sum_i w_{rs} P_{ist}}{\sum_s \sum_i w_{rs} P_{ist}}. \quad (3.14)$$

The first 3 summands of the right-hand side of the equation (3.11) are the usual national effect, while the second three denote the difference between the sectoral growth rates in neighbouring regions and the sector-wide national growth.

An analysis of agricultural gross value added (AGVA) growth in 47 Spanish NUTS 3 regions demonstrates the promise of the chosen approach. Depending on the reciprocal values of the six summands of the formula (3.11), the regions have been assigned to one or another group, which introduces a notable formalization in the empirical approach originally proposed in [54].

### 3.5.2 SSA application to the study of wine imports

Spatial SSA is undoubtedly the most advanced method currently available. However, it has one serious drawback: with zero values of the economic variable under study, and with no interaction between regions (all  $w_{rs} = 0$  in a row), zero is produced in the denominator of  $g_r$ ,  $g_{ir}$ ,  $\check{g}_r$  and  $\check{g}_{ir}$  which leads to an error. In some cases it is possible to calculate such coefficients through others, but in general this issue requires further research. The database sample used in this study contains several regions and assortment categories with zero values for some particular years (for example, see Table C.5 and Table C.6). For this reason, the author decided to rely on static and dynamic methods to study the structure of Italian wine exports.

What they have in common is the methodology for calculating regional economic growth/decline for each industry. In this paper EC (see equation (4)) reflects the difference over time in the number of liters of Italian wine imported into Russia from region  $r$ , in other words,

$$\Delta P_r = P_{rT} - P_{rt}. \quad (3.15)$$

*The National Share* measures the change in wine imports from the region based on the assumption that the number of liters is increasing at the rate of total wine imports from Italy, viz.:

$$NS = \sum_i P_{irt} g_n, \quad (3.16)$$

$$g_n = \frac{P_{nT} - P_{nt}}{P_{nt}}, \quad (3.17)$$

where  $P_{irt}$  is the volume of wine imports of category  $i$  of region  $r$  in the initial year  $t$ ,  $g_n$  is the rate of change in wine imports from Italy as a whole for the period  $t - T$ ,  $P_{nt}$  and  $P_{nT}$  are imports in liters of all Italian wine in the initial and final years, respectively.

The indicator NS turns to zero when there is no growth in total imports. In this case, category and regional dynamics come to the fore. On the other hand, with non-zero  $g_n$  and zero values of IM and RS, the growth/decline of wine imports from the region will be solely due to growth at the national level. In other words, if wine imports from a region grow at the same rate as the national average, then the region has no comparative advantage.

The *Industrial Mix* reflects the impact that the growth of a particular category of Italian wine has on the growth of wine imports from the region  $r$  dynamics. It is calculated by the formula:

$$\text{IM} = \sum_i P_{irt}(g_{in} - g_n), \quad (3.18)$$

$$g_{in} = \frac{P_{inT} - P_{int}}{P_{int}}, \quad (3.19)$$

where  $g_{in}$  is the growth/decline rate of total wine imports from Italy by category  $i$  for the whole period  $t - T$ , and  $P_{int}$  and  $P_{inT}$  are respectively the volume of Italian wine imports of category  $i$  from all regions in the initial and final year. Thus, if a region is characterized by the production of promising categories, which give an increase for all Italian wines as a whole, this will be reflected in the total growth of imports from that region.

IM turns to zero if the category growth rate  $g_{in}$  and the growth rate of all the Italian imports  $g_n$  are equal. In this case, the region's growth will be determined by the national trend and regional dynamics. In the absence of NS and RS dynamics, the *Industrial Mix* demonstrates the extent to which category growth for Italy determines the growth of wine imports from the region under study.

Finally, *Regional Share* measures advantages or disadvantages, which affect the imports into Russia of certain categories of wine and, accordingly, the change in imports from the region.

$$\text{RS} = \sum_i P_{irt}(g_{ir} - g_{in}), \quad (3.20)$$

$$g_{ir} = \frac{P_{irT} - P_{irt}}{P_{irt}}, \quad (3.21)$$

where  $g_{ir}$  is the growth/decline rate of imports of wine category  $i$  from region  $r$  over the whole period  $t - T$ , while  $P_{irt}$  and  $P_{irT}$  are, respectively, the volume of imports of Italian wine of category  $i$  from region  $r$  in the initial and final year. RS is converted to zero when the dynamics of category and regional growth are equal. The non-zero indicator reflects how strong the regional dynamics are against the national and category dynamics.

To summarise, the change in imports into Russia of Italian wine from region  $r$  can be represented as follows:

$$\Delta P_r = P_{rT} - P_{rt} = \sum_i P_{irt}g_n + \sum_i P_{irt}(g_{in} - g_n) + \sum_i P_{irt}(g_{ir} - g_{in}). \quad (3.22)$$

The dynamic SSA method calculates three effects for consecutive pairs of years and then summarises the results over the time period under study. In contrast to the classical SSA this

method implies all annual changes in wine imports. Thus, the possible assumption of no or little change in imports during the period made from the start and end year data can be overcome by the dynamic approach. The change  $\Delta P_r$  in imports from region  $r$  can then be shown as follows. As in the classical SSA, NS is calculated using the formula:

$$NS = \sum_t^{T-1} \sum_i P_{ir}^t g_n^t, \quad (3.23)$$

$$g_n^t = \frac{P_n^{t+1} - P_n^t}{P_n^t}, \quad (3.24)$$

where the index of year  $t$  and the following year  $t + 1$  are introduced and, in addition to summing up by category, summing up by annual intervals is carried out.

IM accordingly takes the form:

$$IM = \sum_t^{T-1} \sum_i P_{ir}^t (g_{in}^t - g_n^t), \quad (3.25)$$

$$g_{in}^t = \frac{P_{in}^{t+1} - P_{in}^t}{P_{in}^t}, \quad (3.26)$$

RS in the dynamic method is expressed as:

$$RS = \sum_t^{T-1} \sum_i P_{ir}^t (g_{ir}^t - g_{in}^t), \quad (3.27)$$

$$g_{ir}^t = \frac{P_{ir}^{t+1} - P_{ir}^t}{P_{ir}^t}, \quad (3.28)$$

The final formula for the **dynamic method** is as follows:

$$\Delta P_r = \sum_t^{T-1} (P_r^{t+1} - P_r^t) = \sum_t^{T-1} \sum_i P_{ir}^t g_n^t + \sum_t^{T-1} \sum_i P_{ir}^t (g_{in}^t - g_n^t) + \sum_t^{T-1} \sum_i P_{ir}^t (g_{ir}^t - g_{in}^t). \quad (3.29)$$

The study also used an alternative method of dynamic SSA as described in the previous section. The formula in this case takes the form:

$$\Delta P_{ir} = \sum_t^{T-1} (P_{ir}^{t+1} - P_{ir}^t) = \sum_t^{T-1} P_{ir}^t g_n^t + \sum_t^{T-1} P_{ir}^t (g_{in}^t - g_n^t) + \sum_t^{T-1} P_{ir}^t (g_{ir}^t - g_{in}^t), \quad (3.30)$$

where  $\Delta P_{ir}$  is the dynamically calculated difference over time in the imports of wine category  $i$  from region  $r$ .  $P_{ir}^t$  and  $P_{ir}^{t+1}$  are, respectively, the volume of imports of Italian wine of category  $i$  from region  $r$  in two consecutive years. The rates of growth/decline at national  $g_n^t$ , categorical  $g_{in}^t$  and regional  $g_{ir}^t$  levels are measured for two adjacent years as well.

### 3.5.3 Procedure for implementing the dynamic and static SSA method.

1. The starting point for SSA is the dynamics tables by SSA category and region. Their creation is discussed in the previous sections of this chapter. Each of the tables contains data for 20 regions and Italy as a whole (see Table C.5 to C.13).
2. The next step is to sample data for the years 2012 to 2020 for a particular region. The paper examines in detail the situation for the most significant of them, namely Apulia, Emilia-Romagna, Piedmont, Tuscany, and Veneto. The table by region is given in Appendix A (see Tables C.14–C.18). Since the algorithm implies a comparison of the dynamics with total imports from Italy, a table has been prepared for the indicators by year for the country (see Table C.19).
3. Further, based on the formula (3.22) for each region, we start to reckon *National Share*, *Industrial Mix* and *Regional Shift* for each pair of years. Year of 2013 correlates with 2012, 2014 with 2013, and so on. By doing the necessary computations, we get a picture of decline or growth degree for each SSA category in the selected pair of years. For a **dynamic SSA model**, the first step is to make calculations for consecutive pairs of years through 2020. For the **static SSA model**, the differences are determined for the boundary years of the range without considering the situation within it. Thus, 2016 is compared to 2012, 2020 to 2016, and 2020 to 2012. At the end of the current step, we have 11 tables for each of the 5 regions (see Tables C.20–C.24).
4. The summation totals by years form an integrated result for the region according to formula (3.29). The data are presented in Table D.1 and provide an opportunity to compare totals according to the static and dynamic method.
5. Tables D.2–D.6 contain information according to the formula (3.30) and the SSA alternative. For each region, data are collected for pairs of years in each category. In the end, the information for each region is 16 tables. The results for the **dynamic SSA model** are obtained by summing data for pairs of years within a given period. These periods are three: 2012–2016, 2016–2020, and 2012–2020. The results for the **static SSA model** were transferred from Tables D.2–D.6 to the corresponding tables for categories.
6. It is important to note that in steps 3. and 5., when calculating the *Regional Shift*, it is possible that division errors may occur when the first year of the range had a zero import value. Nevertheless, based on the formula (4) RS can be indirectly calculated. Such specific values are labeled with the † sign in the tables. A more detailed discussion is in the Chapter 4.

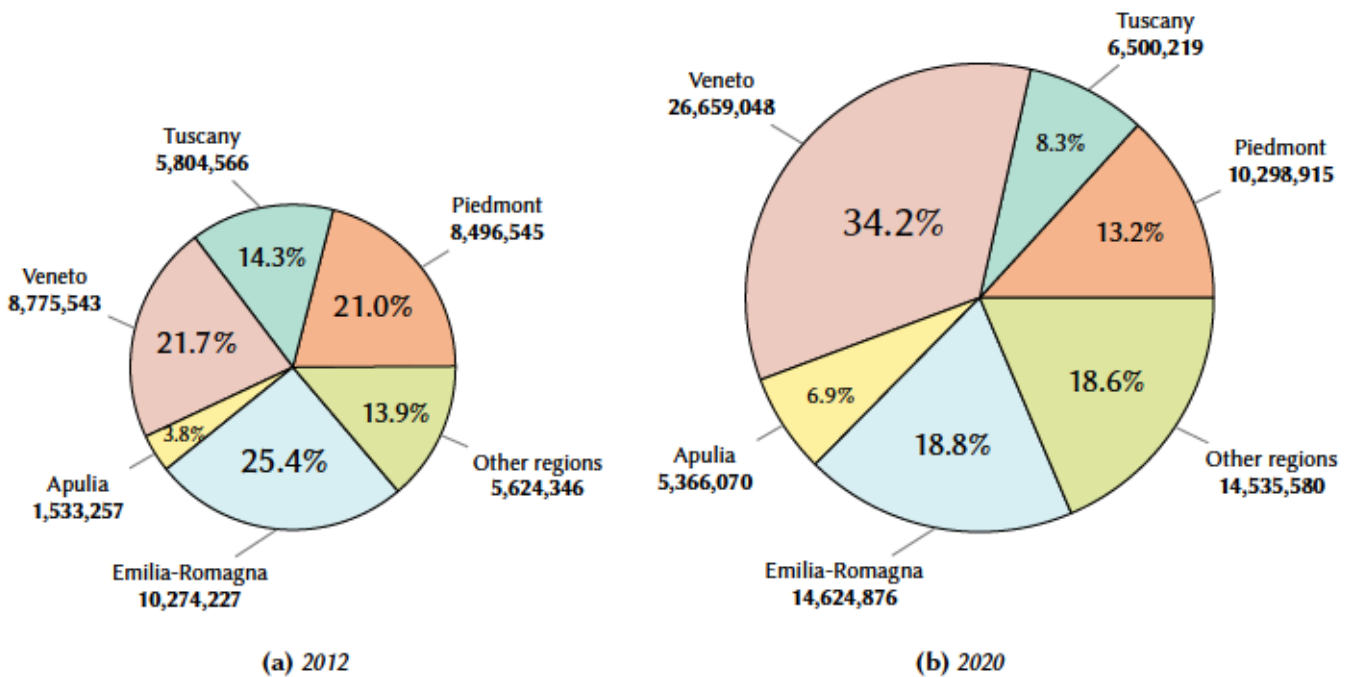
# Chapter 4

## Results

Italy is the largest wine exporter to Russia. It is possible to distinguish 5 most significant regions of Italy, producing and exporting GI wines. These are Apulia, Emilia-Romagna, Piedmont, Tuscany and Veneto. However, in the period from 2012 to 2020 the situation on the imported wine market in Russia has changed noticeably (see Figure 4.1).

So in 2012 Emilia-Romagna was in the lead, exporting to Russia 10 million liters of wine, or 25% of the total volume. The second largest and the third largest exporters were Veneto and Piedmont, with volumes of about 8.5 million liters and about 21% each. Tuscany was fourth with 5.8 million liters and 14% of the total. Apulia had a share of only 3.8% with a volume of 1.5 million liters. Together, the five regions made 86.1% of Italy's total exports, which amounted to 40.5 million liters (see Table C.19).

Figure 4.1: Export of Italian GI wines to Russia by regions, liters.



Source: author's elaboration of customs data archive of Arsenal LLC[42].

In 2020, the picture changed radically. Total GI wine exports almost doubled, rising to nearly 78 million liters. The overall export share of the 5 regions dropped considerably, to 81.4%. The remaining regions strengthened their presence in imports, with Sicily and Abruzzo coming closest to the leaders. The export share of Veneto and Apulia increased radically. The other 3 regions in question lost their positions. Veneto became the most important region with



a share of more than one third of GI wine exports to Russia.

The goal of the work was to determine what factors were involved in the changes that occurred. Shift-share analysis was chosen as a tool for such work. The basic formula underlying this approach is:

$$EC = NS + IM + RS.$$

EC (*economic changes*) refers to the increase or decrease of Italian wine exports of GI categories in liters from a specific region over the time period from 2012 to 2020. This overall change is the result of the effect of the following drivers:

- NS (*national share*) shows how much the growth of regional exports is due to the growth of total Italian GI wine exports.
- IM (*industrial mix*) in the context of the paper shows how the growth of particular wine categories has affected regional growth. In other words, the coefficient characterizes the regional wine portfolio, made up of 16 categories depending on the prices and the type of wines.
- RS (*regional shift*) demonstrates a region-specific growth effect that is not due to any of the factors listed above, e.g. a growth due to specific marketing strategies.

Two SSA methods were used in this paper. The first one is static. It uses the first and the last year of the range for the analysis and is good in the situations when the growth or decline is permanent. The second method is dynamic. It takes into account annual fluctuations within the period in question. At that the results of the two methods can differ noticeably.

We consider the period from 2012 to 2020. The growth of exports in this range is not homogeneous (see Appendix D). When summarizing the results, it was decided to analyze the outcome of the dynamic method, as it is more accurate.

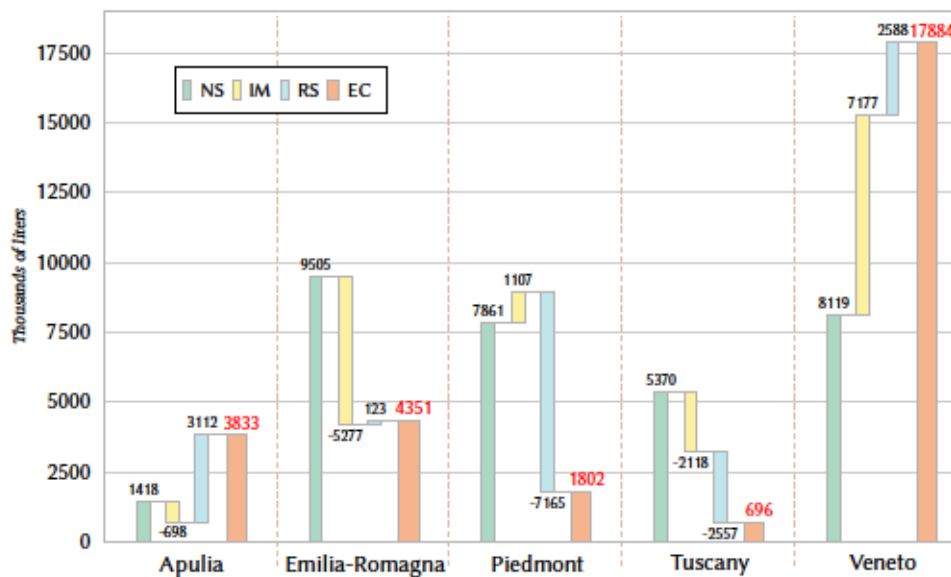
Also, given that the final tables contain a lot of data, we summarize them graphically, showing the results in diagrams.

An illustration for the static SSA results is Figure 4.2. The results of the dynamic analysis are visualised in Figure 4.3.

These graphs allow to compare the two SSA methods for the year range 2020-2012. As an example of the differences, consider the results of the two methods for the Piedmont region. The IM for the static method is positive, i.e., the effect of the export portfolio from this region is beneficial. At the same time, the IM for the dynamic method is negative, and given the fluctuations in export growth of the region, the influence of the export portfolio is unfavorable.

Let's move on to a detailed examination of the results of the dynamic SSA. What all regions have in common is the positive value of NS. All regions had the growth preconditions from the dynamics of GI wine exports from Italy as a whole. At the same time, in Emilia-Romagna, Piedmont and Tuscany NS markedly exceeded the overall growth (EC). The second important point is that only two regions recorded positive regional dynamics (RS), namely Apulia and Veneto. For Apulia, RS was 37% of the total growth, for Veneto 25%. IM played a positive role

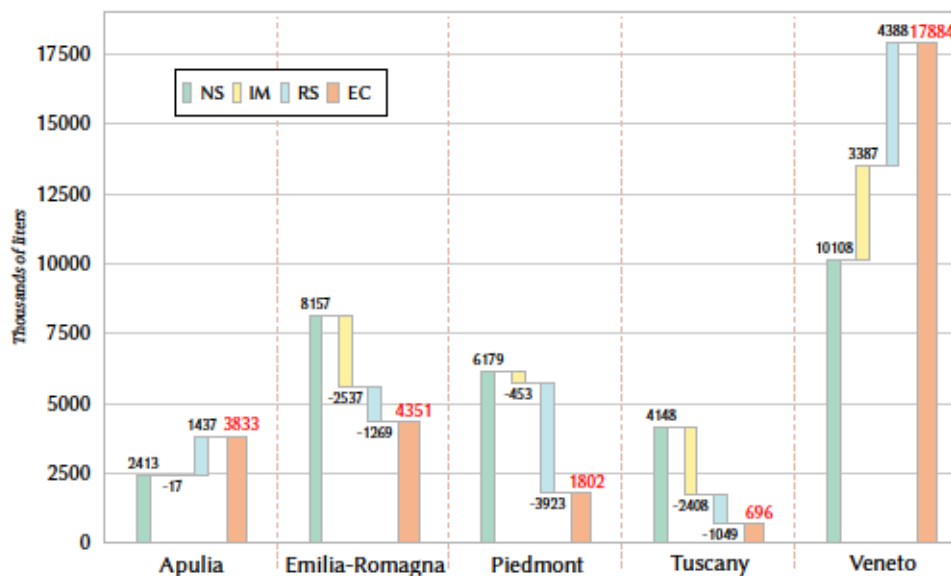
Figure 4.2: Static SSA results by region, thousands of liters.



Source: author's elaboration of customs data archive of Arsenal LLC[42].

only in exports from Veneto. The portfolio of wine categories determined an increase of 19%. In exports from Apulia, IM did not play a role, in the remaining three regions the impact is negative. That is to say, the dynamics of exports by wine categories specific to these regions was significantly lower than the Italian average. For Tuscany this effect was most pronounced.

Figure 4.3: Dynamic SSA results by region, thousands of liters.



Source: author's elaboration of customs data archive of Arsenal LLC[42].

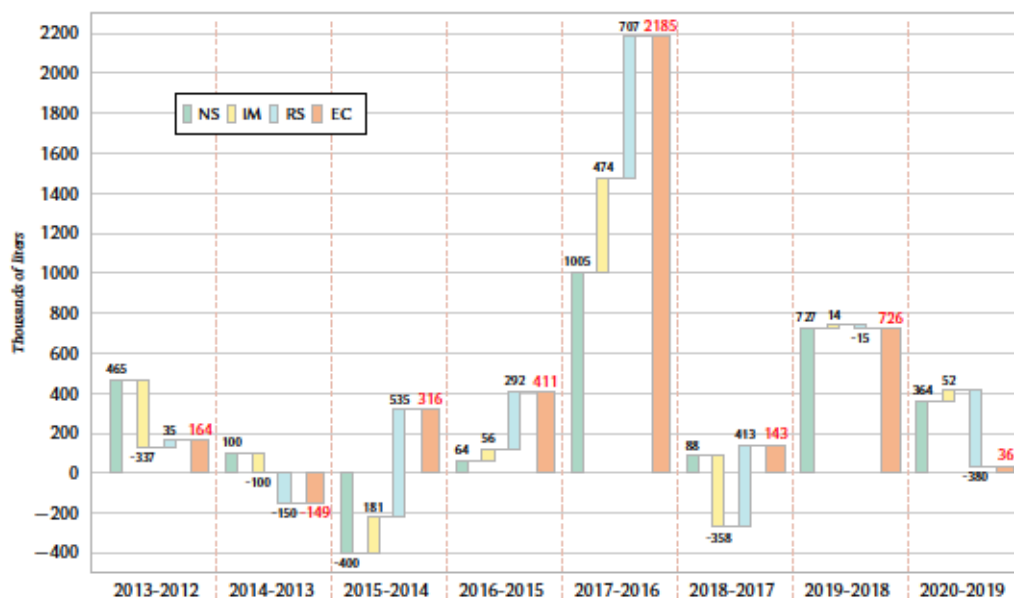
The following 5 graphs (Figure 4.4- 4.8) show how the totals for each region add up from the sub-periods. These subperiods differ meaningfully from region to region.

The first range from 2012 to 2015 is characterized by a decline across all regions, despite an overall upward trend from 2012 to 2020. There is a single time period here, 2015-2014,

when NS was negative. That is, the total export of GI wines from Italy to Russia declined during this period. What draws attention is the growth of EC exports from the Apulia region in the 2015-2014 period, even though the NS was negative. This is a unique situation.

IM partially offset the NS dip in the 2015-2014 dynamics also in Apulia (by 45%), in Tuscany and Veneto (by 23% and 45% respectively).

**Figure 4.4:** Apulia dynamic SSA data by the pair of years, thousands of liters.



Source: author's elaboration of customs data archive of Arsenal LLC[42].

From 2012 to 2015 RS had small or negative values for all the regions considered, except for Apulia, where in the 2015-2014 period a growth of 535 thousand liters provided a positive value of the final growth (316,000 liters).

The next time period from 2015 to 2017 is characterized by an active recovery. The main component of export growth for all regions was NS. However, the details of the situation differ by region.

In Emilia-Romagna, there was a drop in IM (-595 thousand liters), which led to a negative result in 2016-2015 (-304 thousand liters). In 2017-2016, the IM drop is even greater (-1327 thousand liters), which reduced the final growth value (EC) by 29%. Thus, the assortment portfolio of Emilia-Romagna in comparison with Italy total played a disadvantageous role in this period.

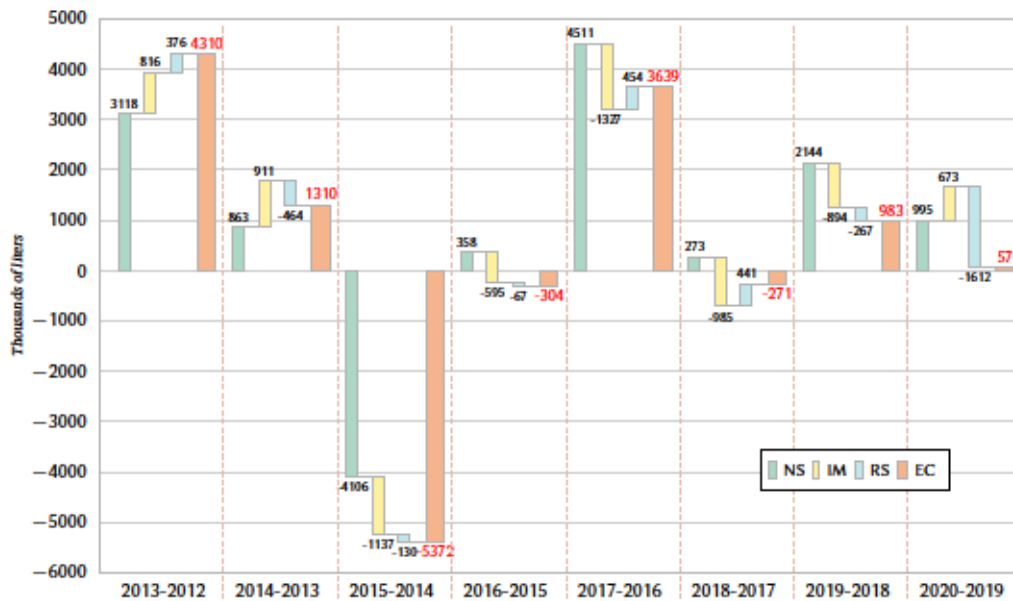
In Piedmont exports, both IM and RS worsened the national share, for example, by 30% in the 2017-2016 period.

For Tuscany, IM growth was fully offset by RS decline, so that the final EC growth was fully in line with the NS.

In Veneto, 71% of the overall dynamic in 2016-2015 was determined by regional growth, and 98% of the 2017-2016 growth was regulated by the national component.

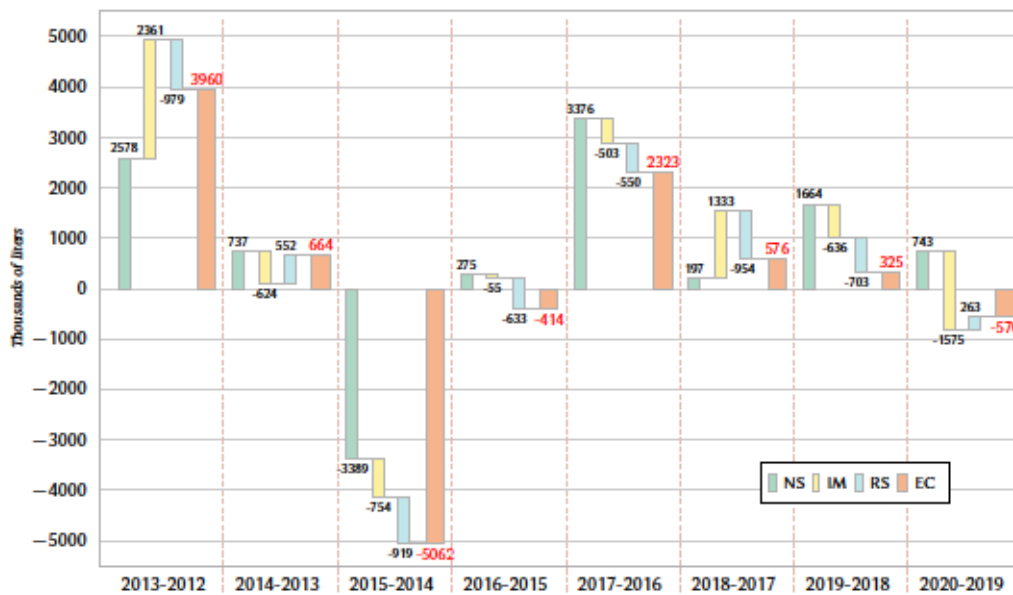
Apulia stands apart again. Export growth was driven by increases in all three components.

Figure 4.5: Emilia-Romagna dynamic SSA data by the pair of years, thousands of liters.



Source: author's elaboration of customs data archive of Arsenal LLC[42].

Figure 4.6: Piedmont dynamic SSA data by the pair of years, thousands of liters.



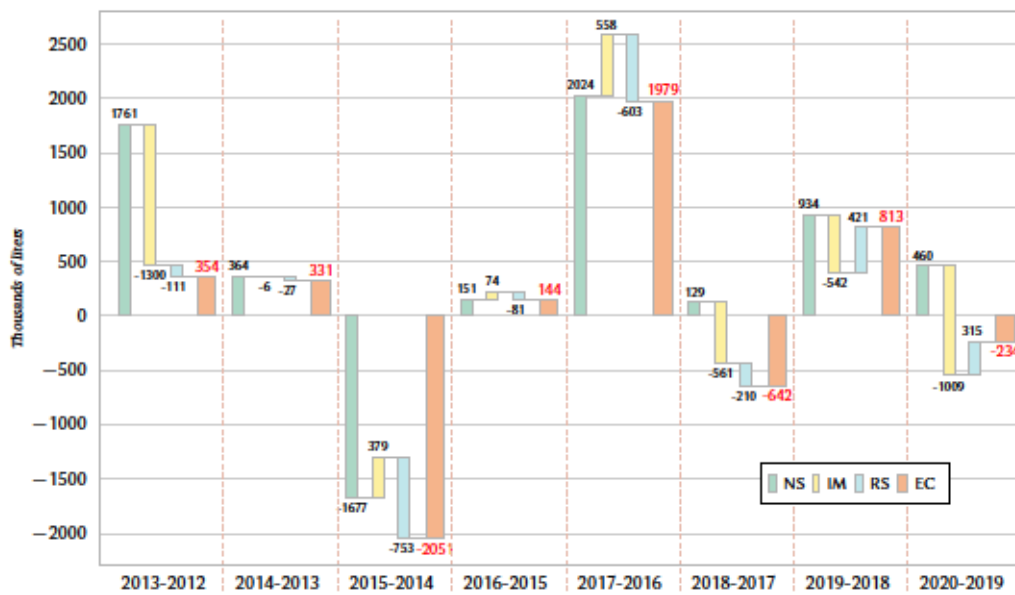
Source: author's elaboration of customs data archive of Arsenal LLC[42].

For example, in 2017-2016 NS was 46%, IM was 22%, and RS was 32% of the total.

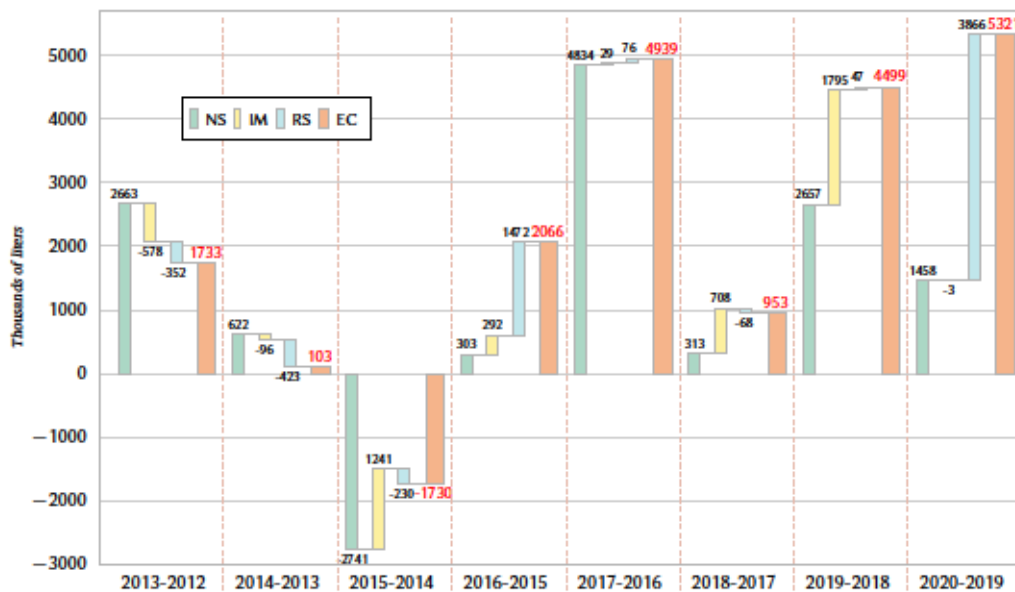
The last period from 2017 to 2020 sufficiently diverse for the regions. The common thing is that the NS component was positive and maxed out in the 2019-2018 sub-period.

In Apulia, all the EC changes were positive. Note the high RS in 2018-2017 (413 thousand liters), the almost zero IM and RS in 2019-2018, and the drop of 380 thousand liters in the 2020-2019 sub-period, which led to almost zero total.

Exports from Emilia-Romagna saw growth only in the 2019-2018 sub-period. The negative IM in the first two sub-periods had a significant impact on the overall result (-271 thousand liters and -894 thousand liters, respectively). In the third sub-period, RS of -1,612 thousand

**Figure 4.7:** *Tuscany dynamic SSA data by the pair of years, thousands of liters.*

Source: author's elaboration of customs data archive of Arsenal LLC[42].

**Figure 4.8:** *Veneto dynamic SSA data by the pair of years, thousands of liters.*

Source: author's elaboration of customs data archive of Arsenal LLC[42].

liters led to a final almost zero growth.

For the Piedmont region from 2017 to 2020, there is a consistent decline in EC growth with a negative value of  $-570$  thousand liters in the 2020-2019 subperiod. The last two time periods showed significant negative IM values.

The EC for Tuscany was positive only in the 2019-2018 subperiod. The overall picture for the entire sub-period here is of significant negative IM values. They dramatically affected the final results.

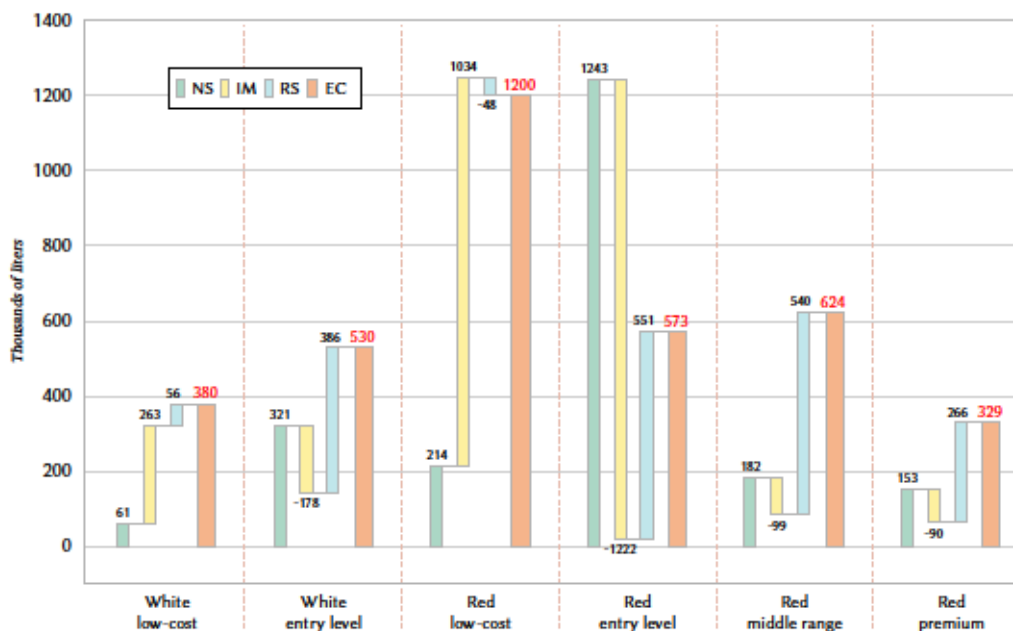
Veneto differed from all regions with stable growth from 2017 to 2020. In the first two intervals, growth due to the assortment portfolio (IM) played a role (by 74% and 39% of total

growth, respectively). In the 2020-2019 period, regional growth RS (73% of EC) was key.

As can be seen from the charts, IM had an overriding importance in each region. In other words, the mix of wine categories for each region often determines the final result on export dynamics. To confirm this, a composite of the dynamic SSA results by assortment category for each of the 5 regions was conducted. The numerical data are shown in Appendix D (see Tables D.2-D.6). The graphical interpretation is given below in Figures 4.9-4.13. The most significant results in terms of dynamic SSA are visualised in the charts.

For Apulian export (see Figure 4.9) all red wine categories are among the leaders, as are the two base categories for white wines. The *White.low-cost* and *Red.low-cost* categories are growing, and IM defined by 69% and 86% respectively. This means that these categories

Figure 4.9: Apulia 2020-2012 dynamic SSA data by category, thousands of liters.



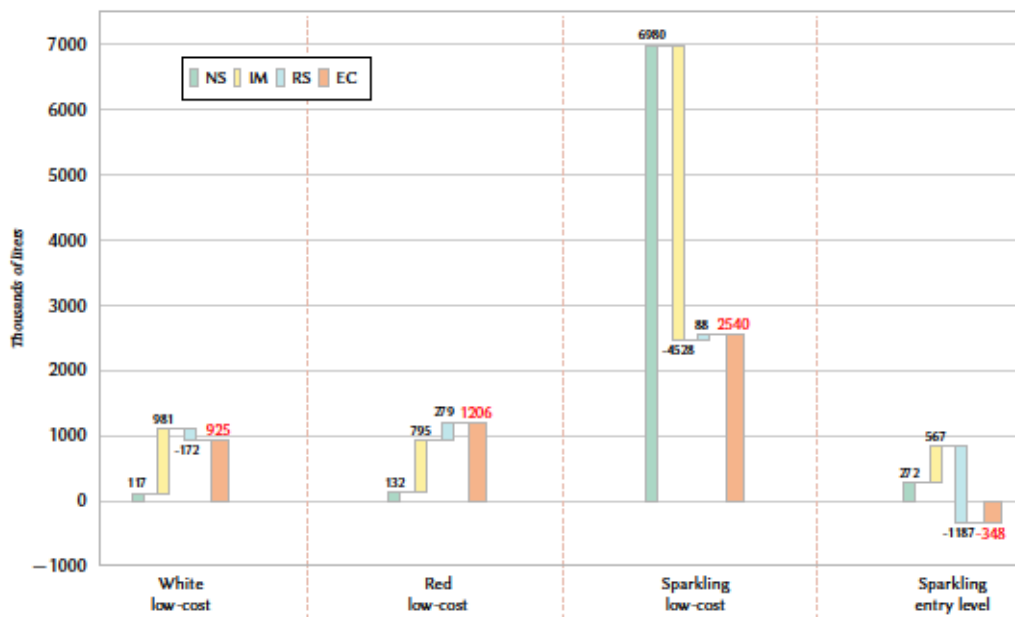
Source: author's elaboration of customs data archive of Arsenal LLC[42].

perform significantly better in Apulia than the Italian average. *Red.entry level* and *Red.middle range* differ from the other categories by a high regional component.

There is a notable imbalance in Emilia-Romagna (see 4.10). The *Sparkling* category is far ahead of the others and accounts for more than half of the region's total. It is noteworthy that the growth could have been 2.5 times more on account of the national component alone, but there is no growth on the regional level and the IM component eats up two thirds of the national growth. Red and white wines in the *Low-cost* category show growth in the order of one million liters over the nine-year range mostly because of IM.

In Piedmont, the significant developments which determined the overall result played out in the *Sparkling* wine category, namely the *Middle range* and *Premium*. The first is a plus-sign leader due to the NS and IM components. The second is a minus leader, with the sectoral and regional summands driving the category into deep negative territory. Although at the national level, premium sparkling wines were on the rise. All other categories are vanishingly small

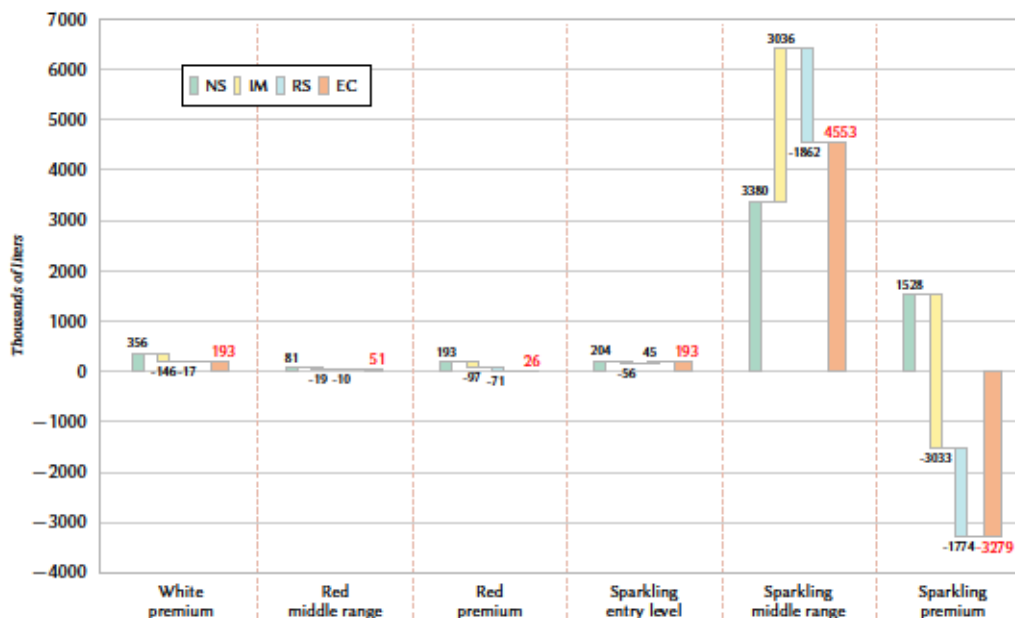
Figure 4.10: Emilia-Romagna 2020-2012 dynamic SSA data by category, thousands of liters.



Source: author's elaboration of customs data archive of Arsenal LLC[42].

against this background. The leader of still wines is *White.premium* showed a growth of 193 thousand liters from 2012 to 2020 largely due to national growth (see 4.11).

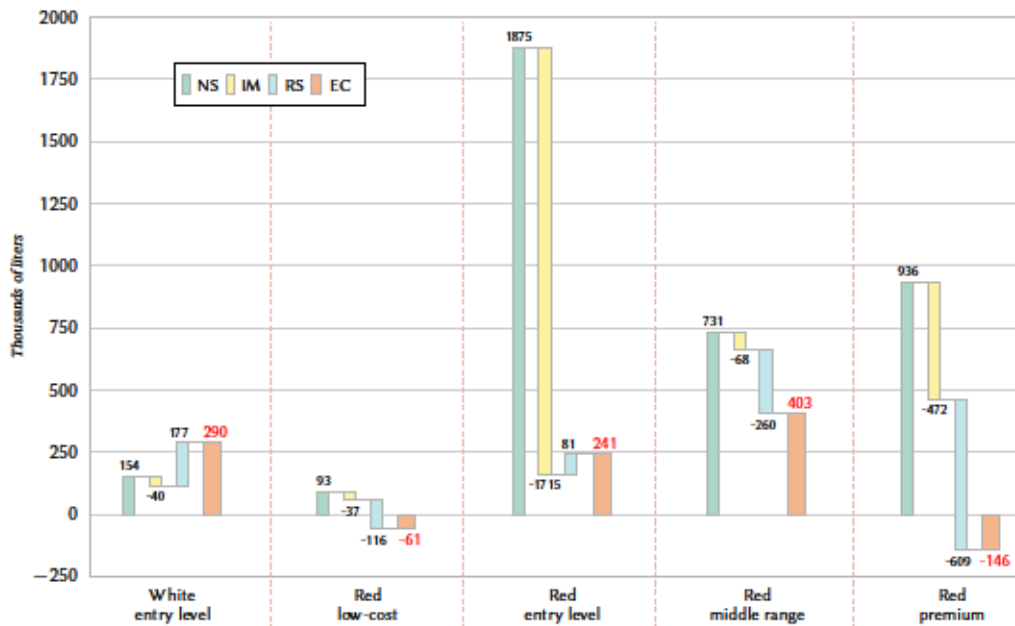
Figure 4.11: Piedmont SSA 2020-2012 dynamic data by category, thousands of liters.



Source: author's elaboration of customs data archive of Arsenal LLC[42].

Tuscan best result is in the *Red.middle range* category, but it is an increase of only 400 thousand liters in 9 years. What is striking is that all the leading categories have a negative IM value, in other words the respective categories grow markedly worse or even fall in comparison with the national average. This is especially noticeable in *Red.entry level*. In the case of *Red.premium*, there is a strong drop in both the IM and RS component. Even against the high

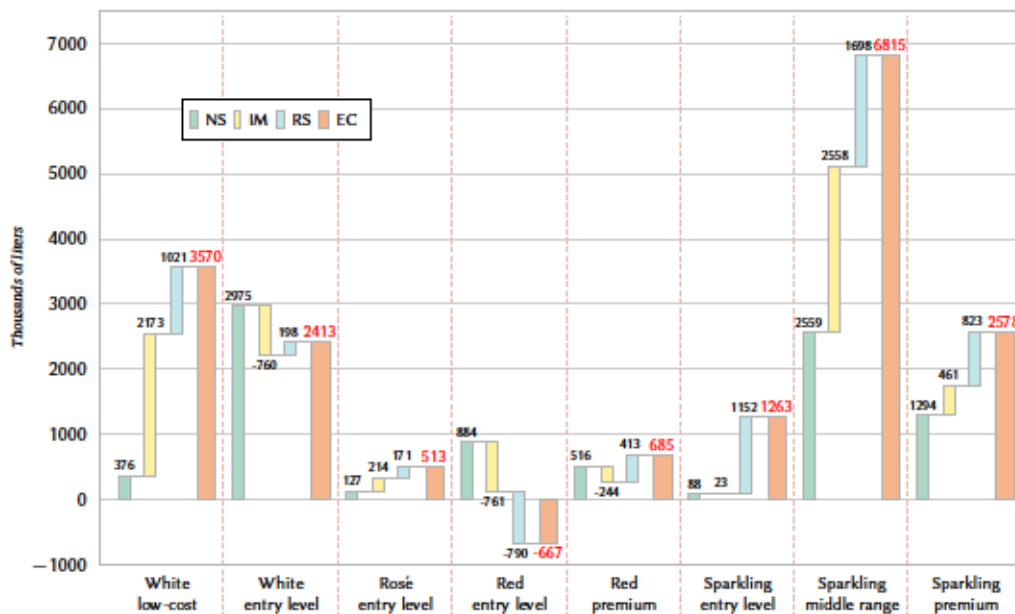
Figure 4.12: Tuscany SSA 2020-2012 dynamic data by category, thousands of liters.



Source: author's elaboration of customs data archive of Arsenal LLC[42].

NS, this led to a negative overall performance in this category (see Figure 4.12).

Figure 4.13: Veneto 2020-2012 dynamic SSA data by category, thousands of liters.



Source: author's elaboration of customs data archive of Arsenal LLC[42].

In Veneto the clear leader is *Sparkling.middle range*. Growth was driven roughly equally by national, category, and regional growth. In addition to overall progress, RS has the highest value here. *White.low-cost* and *Sparkling.premium* had positive IM. In the first case, the IM was 61% of the total growth. The failure of the *Red.entry level* category attracts attention. Both the industry and regional components have fallen here. It is the only category with a negative trend in the 2020-2012 range.



In conclusion, it is also important to mention the issue of situations in which calculation of the regional component (RS) led to division by zero errors. According to formulas (3.4) and (3.6), this happened because of a zero value of the parameter analysed, i.e. imports in liters for the first of a pair of years. This issue is found in all regions, most frequently in the rosé wine categories. In the classical SSA, fortunately, this problem is solved by the formula:

$$RS = EC - NS - IM.$$

In more advanced versions of SSA, some of the summands also give a division by zero error, and the approach used above does not work. Indirectly calculated values are entered in Tables D.2–D.6 with appropriate notations.

# Chapter 5

## Discussion

The aim of this work was to analyze the structure of Italian GI wine exports to Russia, to draw conclusions from the development trend in the period from 2012 to 2020. As a result of this work and the use of the Shift-share analysis tool, it is possible to identify the main drivers that influenced the dynamics and qualitative characteristics of the process under consideration and link them to the SSA results.

First of all, let us highlight the change in the *euro exchange rate against the ruble*. Figure 5.1 shows the euro exchange rate for the period under consideration from the Chapter 2. The analysis showed the presence of several peaks in the dynamics, caused by political and economic reasons.

Figure 5.1: Euro to ruble exchange rate.

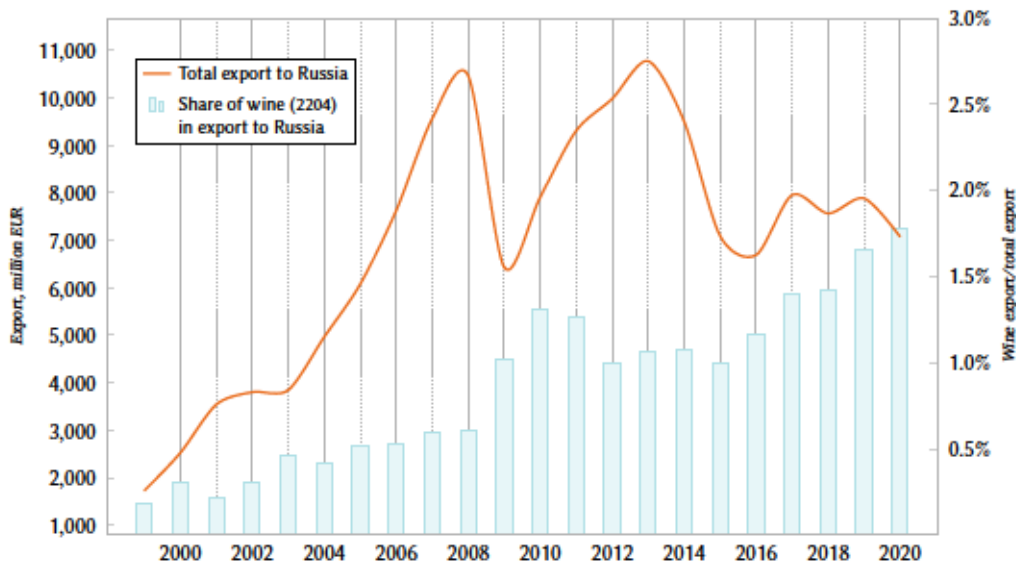


Source: author's elaboration of Central Bank of Russia [24] data.

The second important driver was the *dynamics of total exports from Italy to Russia*, as well as the systematic increase in the share of wine in it (see Figure 5.2). This issue has been already discussed in Section 2.3.2.

Let us compare the above trends with Figure 5.3. Here we take as the basis the Figure 4.8 where the dynamics of the *National shift* for the Veneto region is highlighted. NS is the first of three SSA factors responsible for the growth of exports from the region. This indicator corresponds to the overall growth of GI wine exports from Italy to Russia, in proportion to the current share of the region.

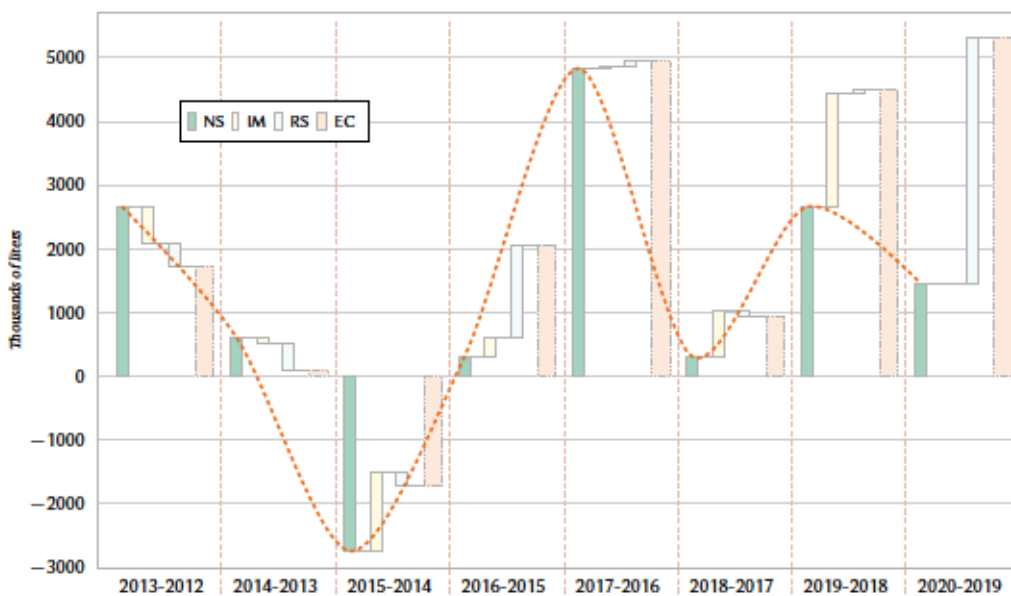
Figure 5.2: Dynamics of Italian export to Russia.



Source: author's elaboration of Coeweb Instat [4] data.

Note that the change in NS clearly repeats both the dynamics of the euro exchange rate and the dynamics of exports, and may well serve as an integral indicator of the external situation. The dips of 2015-2014 and 2018-2017 are clearly visible; these periods followed surges in the exchange rate and drops in total exports.

Figure 5.3: NS component dynamics of Veneto, thousands of liters.



Source: author's elaboration of customs data archive of Arsenal LLC[42].

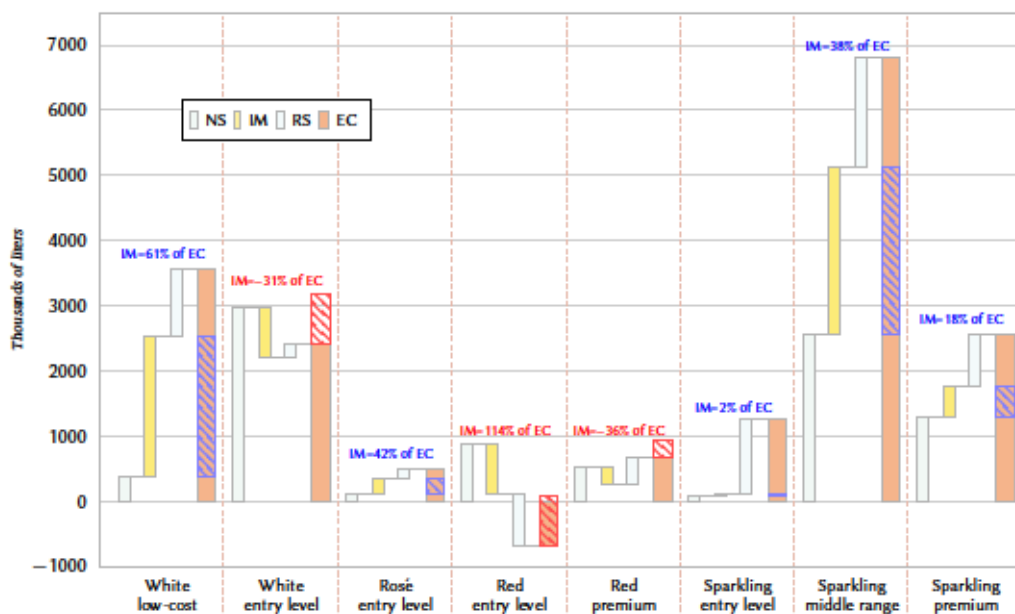
The next important trend is related to the composition of demand for imported wine in Russia. In Figure 2.27 from Section 2.4.2 it was shown that white wines account for 64% of total imports in Russia. It was also noted that sparkling wines, mainly Prosecco, play a decisive role in the growth and leading position of Italy, compared to the declining trend of France, for

example (see Figure 2.24). The share of sparkling wines in Italy's total exports in 2020 was 44%, while France's was 18% only.

One of the most important drivers shaping the export picture is price. Figure 2.26 shows what ranges have developed in Italy over the years. The main growth trends were recorded in the *Middle range* and *Low-cost* price bands.

These drivers largely affect to the meaning of the second component of the basic SSA formula, namely IM. As noted earlier, it reflects the properties of the region's wine portfolio. For example, consider Figure 5.4. In the exports of the leading Veneto region, the IM indicator for the *White.low-cost* and *Sparkling.middle range* categories differs significantly from the other categories. Obviously, these wine categories from Veneto have a remarkable impact on the final picture of exports and reflect the general characteristic of demand in Russia.

Figure 5.4: Effects of IM on the Veneto 2020-2012 EC by category using the dynamic SSA.



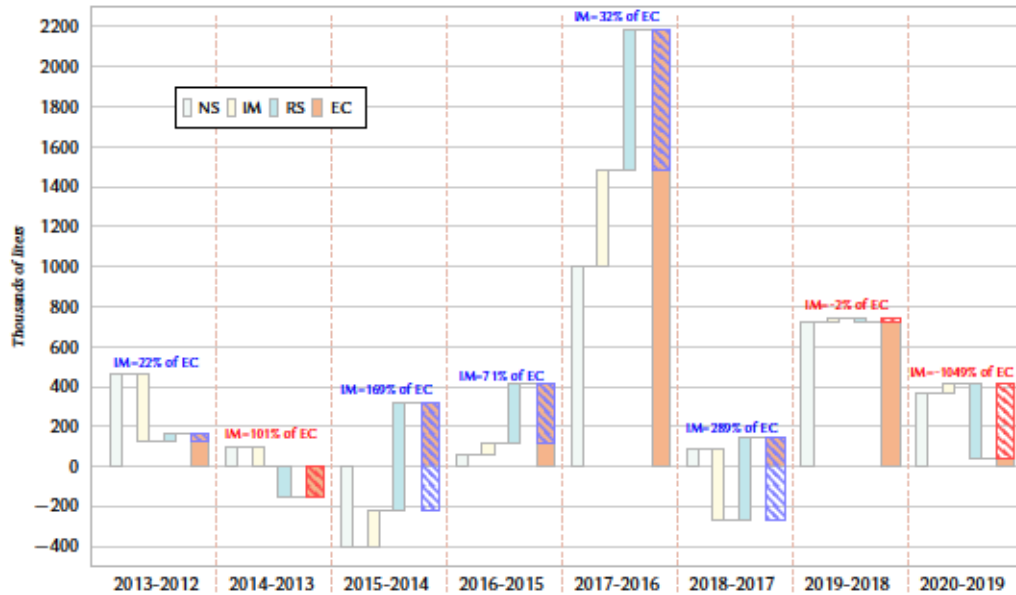
Source: author's elaboration of customs data archive of Arsenal LLC[42].

In addition, thanks to the IM we more accurately identified the dynamics of the increase of white wines and the poor dynamics of the regions with a traditionally high proportion of reds. An example is Tuscany. Figure 4.12 shows how IM for *Red.entry level* (the lion's share of this category is Chianti DOCG) plays a key role in reducing the potential of exports of the region.

The regional RS indicator can be interpreted as a measure of the region's success in wine exports against the background of national and category trends. It allows to judge which regions stand out from others. A striking example is Apulia, whose export results serve as proof that regional dynamics can override negative results of IM categories and even NS. Let's look at Figure 5.5. High regional dynamics allowed Apulia to have an increase in the 2015-2014 period, the only one where NS was negative and all other regions decreased exports. In the 2018-2017 period, RS overcame the categorical decline and again provided EC growth. In Figure 5.6 we can see the results of RS in terms of wine categories. *Red.entry level* is a prime

example. In contrast to Tuscany the strong fall of IM is compensated by the regional dynamics by 45%. Therefore we can say that Russian consumers prefer *Red.entry level* wines from Apulia.

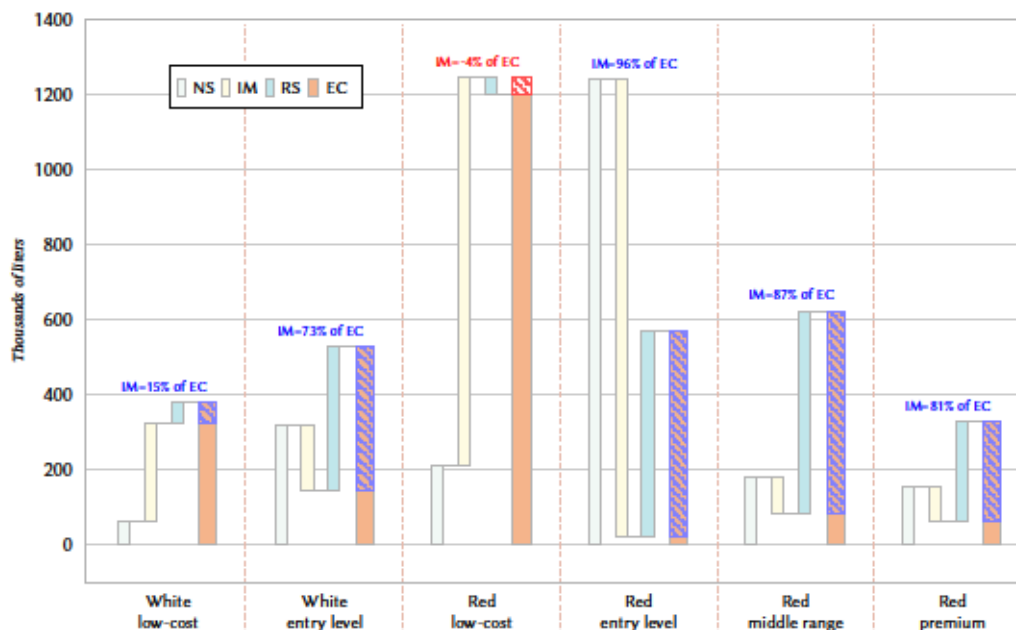
Figure 5.5: Effects of RS on the Apulia 2020-2012 EC by year using the dynamic SSA.



Source: author's elaboration of customs data archive of Arsenal LLC[42].

RS indicator in many ways reflects marketing trends, the advantage of the perception of some regions over others, some GI over others. This topic is interesting for the further research in order to understand, for example, the prevalence of Prosecco and the fall of Lambrusco along with Asti, while the category of sparkling and semi-sparkling wines from Italy has a good demand in Russia.

Figure 5.6: Effects of RS on the Apulia 2020-2012 EC by category using the dynamic SSA.



Source: author's elaboration of customs data archive of Arsenal LLC[42].

The SSA methods used in this paper do not take into account the mutual influence of regions. In the case of Spatial SSA there is such a possibility. The underlying algorithm makes it possible to determine the degree of influence of neighboring regions by certain criteria. For example, it would be interesting to analyze how Veneto affects its neighbors, perhaps part of the dynamics of this region affects its neighbors.

## Chapter 6

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### Conclusion

This work considered the evolution of wine exports to Russia from the five largest wine-producing regions of Italy (i.e., Apulia, Emilia-Romagna, Piedmont, Tuscany and Veneto), considering the period from 2012 to 2020. A shift-share analysis was implemented and it proved to be a good tool for analyzing the main drivers explaining the dynamics of Italian GI wines exports to Russia.

As part of the work, static and dynamic SSA methods were applied to the array of initial data. The second one showed greater suitability for the considered task, as it takes into account multidirectional changes in data values. In addition to the classical representation of the results for the 5 regions, an alternative grouping by wine categories was made.

This representation made it possible to assess both the dynamics of the regions as a whole and by category. The three summands of the main SSA equation allow to identify the major drivers of the growth of exports from certain regions. Whether the development of all exports from Italy played a role (*National share*), the dynamics of the wine category (*Industrial mix*) or still, the final result has the influence of the region of origin (*Regional shift*).

It should be noted, however, that in order to interpret the results obtained, it is important to understand the main factors affecting the trends in question. Therefore, the method itself is not sufficient for the assessment, additional research work is needed.

The period of consideration was limited to 2020 primarily due to the unavailability of the database for 2021 at the time of writing. However, it is worth noting that the period from 2012 to 2020 was saturated with economic and political events, which allowed us to assess the dynamics of change across the full spectrum of possible manifestations. Moreover, the end of 2019 and 2020 were marked by the Covid pandemic, which was also reflected in the results.

The bottlenecks of the method used are the sensitivity to the raw data. The key factor is to clearly relate them to a specific region. In this research, additional preliminary work was carried out to compile the algorithm and extract data on the region of origin of the wine. For this purpose, both the HS code and the information from the name of the product were used.

In addition, as noted in Chapter 4 with zero initial values of periods, there is a division by zero error. In Static and Dynamic methods the problem is solved by an additional calculation. However, advanced spatial models no longer provide such a possibility, and part of the initial data will have to be excluded from consideration.

The direction of further works includes application of the SSA spatial model to address the existence of possible spillover or spatial dependence effects, among neighbouring wine-exporting regions. With regard to this issue, an interesting example is the fate of Prosecco and Lambrusco. Both wines are sparkling, produced in regions geographically neighboring

and also leaders in economic development. Nevertheless, even in the considered time interval from 2012 to 2020 Prosecco grew many times, while Lambrusco had weak dynamics. Another interesting question is why some regions and categories are not subject to crisis economic phenomena. Good example is Apulia after the crisis of 2014. SSA methods form the basis for further research on such issues.



# Appendices

## Appendix A

---

# Explanation of Customs declaration data used for the study

1. **Declaration number (ND)** Format: tttttttt/ddmmaa/nnnnnnn. The first group is *customs code*, allows you to determine through which customs post the goods were imported. The second group is the *date of registration of the application*. The third group is a *unique number of the application*. Each application may contain several goods, so the number is not unique for the line.
2. **Registration date (G072)** Format: dd.mm.aa. Must match the second group from ND. Actually defines the date the goods were imported.
3. **Direction of movement (G011)** Only ИМПОРТ (IMPORT) is used for this work.
4. **Country of origin (G16)** Necessary to filter items imported from Italy.
5. **Shipper's address (G023STREET)** Includes a detailed address, including CAP. This information allows you to determine or verify the region of origin of the wine in case of errors or missing information. (see Subsection 3.3.2).
6. **Contract currency code (G221)** In most cases for Italy it is EUR, but there are contracts RUB, CHF and USD.
7. **Currency exchange rate (G23)** The exchange of the G221 currency as of the date G230.
8. **Currency exchange rate date (G230)** May differ from G072. Actual payment date. The exchange rate is determined according to it.
9. **Product Name (G31\_1)** Usually contains the name of the goods in Russian and the original language, indication of the protected geographical indication, GI category, color of the wine, alcohol level, characteristic i.e. still / sparkling. Key field for analysis. Is the main (but not the only) source of information for classifying wines by color, GI, category.
10. **Manufacturer's firm (G31\_11)** The original name of the company producing the wine.
11. **Trademark (G31\_12)** The brand under which the wine is made.
12. **Harmonized System (HS) Code (G33)** A ten-digit code that (see Figure 3.1) characterizes the product and refers it to the appropriate group to determine the customs regime and customs payments. Contains information about the type of wine, color, country and region (only for some of them), GI (PDO and PGI mostly). Allows to filter the target group of goods for research, as well as to classify the wine by characteristics.

13. **Quantity of goods (in additional unit of measure) (G31\_7)** The basic unit of measure is kg. This additional unit for wine is liter. This field is necessary for the calculation. This is the main parameter for comparing the performance of regions, price groups and other subgroups of the study.
14. **Invoice value (G42)** The value of the goods in the currency of the contract G221.
15. **Customs value (G45)** The value of imported goods in rubles for the purpose of determining customs duties. Includes the value of the goods themselves and the cost of delivery from the producer to customs warehouse per bottle.

## Appendix B

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# Approach used to process data from the database

1. Country is used directly from [42] to filter by Italy (Италия) — field G16.
2. YEAR is a new field, it is used to sort data by imported years and is calculated on the G072 field using the formula =YEAR(B2) the year is extracted (cell B2 contains G072 — see Table C.2)
3. GROUP\_HS, a new field, is needed for further use in the composite field SSA\_category and is formed from the field G33. The Sparkling group includes wines with ee ff codes 10 xx, 21 0x, 22 10 and 29 05. All other codes belong to the Still group. The selection is made according to the formula:

```
=IFERROR(LOOKUP(2;1/SEARCH(MID(HS!$A$2:$A$49;5;4);02);HS!$D$2:$D$49);"")
```

02 is the cell of Table C.2 with the HS code for the current row. HS is Table C.1, where the value in column D is obtained with the use of the first column A according to the code ee ff, which in turn is retrieved by the MID function that cuts symbols from 5 to 8 of the HS code.

An additional check is performed on the G31\_1 field. Using the formula:

```
=IF(ISERROR(SEARCH("Игрист";L2)); "Still"; "Sparkling"),
```

cell Q2 of the GROUP\_name field is formed. "Игрист" corresponds to the beginning of the word "sparkling" in Russian, cell L2 contains G31\_1. Then the GROUP\_HS and GROUP\_name are compared. Unrecognized positions are marked as problematic. Discrepancies are processed manually, all relevant information is checked for traits of still or sparkling wine.

4. GI\_HS is used to filter out PGI and PDO denominations participating in the study. Based on the ee ff value of the G33 field for the current row (see Table C.1), the values corresponding to VDTs, namely 10 96–98, 21 08, 21 09, 21 81–84, 21 91, 22 10, 22 83–84, 22 91, 29 05, 29 81–82 and 29 91 are screened out.

The selection is done similarly to the GROUP HS lookup using the formula:

```
=IFERROR(LOOKUP(2;1/SEARCH(MID(HS!$A$2:$A$49;5;4);02);HS!$B$2:$B$49);"")
```

Again, O2 is the cell of Table C.2 with the HS code for the given row, HS is the Table C.1, where with the help of the first column A data (see part to be precise) the value in column B is retrieved.

An additional check is performed on the field G31\_1, and the results are entered in the field GI\_NAME. With the use of the formula:

```
=IFERROR(LOOKUP(2;1/SEARCH(GI_subst!$A$2:$A$75;L2);  
GI_subst!$B$2:$B$75);"VDT"),
```

where L2 is cell with G31\_1 and GI\_subst is Table C.3. All possible PDO and PGI writings in Cyrillic and Latin are checked. Unrecognized ones (not containing any of the spelling variants) are marked as VDT. Inconsistencies detected by the two methods are looked through manually.

5. Region is a key field for SSA study. Data is collected from several fields of [42] tables.

(i) As we have seen in Table 3.1, some HS codes contain direct indication of region. This data is entered in the Region\_HS field (see Table C.1 in the Appendix). The formula is similar to those used for GROUP\_HS and GI\_HS:

```
=IFERROR(LOOKUP(2;1/SEARCH(MID(HS!$A$2:$A$49;5;4);O2);  
HS!$E$2:$E$49);""),
```

but in this case the E column is used to get the Region value.

(ii) The primary source of region data again is the G31\_1 Name text field. Using the formula

```
=IFERROR(LOOKUP(2;1/SEARCH(Regions!$A$2:$A$235;L2);  
Regions!$B$2:$B$235);""),
```

and mapping the possible text designations of regions and subregions, the Region\_name field is generated. The table Regions includes a list of Russian and English spellings in different variants, taking into account the change of endings in Russian words, acronyms and typical errors. The table includes 234 lines (see Table C.4). For example, Рубикон (Rubicon) appellation name gives us the region of Emilia-Romagna.

(iii) Rows that have a GI\_HS field value other than VDT, but were not identified by Region\_HS and Region\_name, were examined by a similar comparison procedure as was performed for the GROUP\_HS with the exporters' CAP code matching table, and manually by G31\_11 (Manufacturer) and G31\_12 (Trademark) fields. Such a manual check, fortunately, amounted to no more than a couple of hundred lines for each year.

6. Color is determined by the two fields of the [42] tables.

(i) For PDO and PGI denominations, several G33 codes unambiguously correspond to white wines: these are ee ff codes 10 91, 21 24, 21 26, 21 27, 21 28, 21 31, 21 38, 21 79, 22 18, 22 79, 29 18, 29 79 (see Table 3.1). The codes 21 61, 21 62, 21 66, 21 67, 21 68, 21 78, 21 80, 22 58, 22 80, 22 84, 29 58, 29 80 have a correspondence with rosé and red wines, which does not allow to exactly determine the color, but makes it possible to exclude white ones (see cell V2 of Table C.2). This is how the Color\_HS field is formed. The formula uses the C column for generating color values.

```
=IFERROR(LOOKUP(2;1/SEARCH(MID(HS!$A$2:$A$49;5;4);02);  
HS!$C$2:$C$49);""),
```

(ii) The text field Product name G31\_1 in the overwhelming majority of cases contains a spelling of color. By searching the words “Красн” (red), “Белое” (white), “Розов” (rosé) the Color\_name field was filled with the formula:

```
=IF(ISERROR(SEARCH("Красн";L2));IF(ISERROR(SEARCH("Белое";L2));  
IF(ISERROR(SEARCH("Розов";L2));"";"Rosé");"White");"Red")
```

(iii) Positions with colors that were not detected according neither to 6. (i) nor to 6. (ii) were examined manually. There were found no more than 500 of such items for entire the period under consideration.

7. G31\_7 (Quantity of goods in additional units of measure) in liters is used directly from the original table as the main measure indicator for price groups and regions.

8. Euro exchange rate Filled in on the basis of the Central bank of Russia’s euro exchange rate as of the particular date [24].

9. G42 (Invoice value), unfortunately, is not presented for all the positions (only about 60 percent) and makes it impossible to calculate the price per liter in the invoice prices.

10. G45 (Customs value, RUB) This field, in contrast to G42 is available for all the rows without exception and having the value of the Euro exchange rate and the G31\_7 in liters allows to calculate the customs value per liter in Euro. An important note is that this price includes the cost of logistics per liter. See the details in the next section.

11. Price per liter Auxiliary field, serves for determining the price ranges (see Section 3.4) and for Price group categorization. It is obtained as G45 divided by Currency exchange rate (G23) and divided by liters G31\_7.

12. Price group Depending on the Price per liter value the belonging to the group is determined by the intervals:

$$\begin{aligned}
P_L \in (\text{€}0.0, \text{€}2.1] & \quad \textit{low - cost}, \\
P_L \in (\text{€}2.1, \text{€}3.1] & \quad \textit{entry level}, \\
P_L \in (\text{€}3.1, \text{€}4.5] & \quad \textit{middle range}, \\
P_L \in (\text{€}4.5, +\infty) & \quad \textit{premium},
\end{aligned}
\tag{B.1}$$

where  $P_L$  is Price per liter value.

13. SSA category is formed by combining the fields Color and Price group for still wines and GROUP and Price group for sparkling wines, since they are involved in the study without division into colors (see column AC of Table C.2).

# Appendix C

## Data tables

Table C.1: Information contained in the HS code for Italian wines

	A	B	C	D	E	F	G	H
	HS code	GI	Color	Group	Region	Pressure	Alcohol	Volume
2	2204 1091 00	PDO	White	Sparkling	Piedmont	>3 bar	≤15%	≤2l
3	2204 1093 01	PDO	Any	Sparkling		>3 bar	≤15%	≤2l
4	2204 1094 09	PGI	Any	Sparkling		>3 bar	≤15%	≤2l
5	2204 1096 09	VDT	Any	Sparkling		>3 bar	≤15%	≤2l
6	2204 1097 00	VDT	Any	Sparkling		>3 bar	≤15%	≤2l
7	2204 1098 00	VDT	Any	Sparkling		>3 bar	≤15%	≤2l
8	2204 2106 00	PDO	Any	Sparkling		≤3 bar	≤15%	≤2l
9	2204 2107 00	PGI	Any	Sparkling		≤3 bar	≤15%	≤2l
10	2204 2108 00	VDT	Any	Sparkling		≤3 bar	≤15%	≤2l
11	2204 2109 00	VDT	Any	Sparkling		≤3 bar	≤15%	≤2l
12	2204 2124 00	PDO	White	Still	Lazio		≤15%	≤2l
13	2204 2126 00	PDO	White	Still	Tuscany		≤15%	≤2l
14	2204 2127 00	PDO	White	Still	Trentino- Alto Adige, FVG		≤15%	≤2l
15	2204 2128 00	PDO	White	Still	Veneto		≤15%	≤2l
16	2204 2131 00	PDO	White	Still	Sicily		≤15%	≤2l
17	2204 2138 00	PDO	White	Still			≤15%	≤2l
18	2204 2161 00	PDO	Red, rosé	Still	Sicily		≤15%	≤2l
19	2204 2162 00	PDO	Red, rosé	Still	Piedmont		≤15%	≤2l
20	2204 2166 00	PDO	Red, rosé	Still	Tuscany		≤15%	≤2l
21	2204 2167 00	PDO	Red, rosé	Still	Trentino- Alto Adige		≤15%	≤2l
22	2204 2168 08	PDO	Red, rosé	Still	Veneto		≤15%	≤2l
23	2204 2178 00	PDO	Red, rosé	Still			≤15%	≤2l
24	2204 2179 00	PGI	White	Still			≤15%	≤2l
25	2204 2180 00	PGI	Red, rosé	Still			≤15%	≤2l
26	2204 2181 00	VDT	White	Still			≤15%	≤2l
27	2204 2182 00	VDT	Red, rosé	Still			≤15%	≤2l
28	2204 2183 00	VDT	White	Still			≤15%	≤2l
29	2204 2184 00	VDT	Red, rosé	Still			≤15%	≤2l
30	2204 2190 00	PDO/PGI	Any	Still			>15%	≤2l
31	2204 2191 00	VDT	Any	Still			>15%	≤2l
32	2204 2210 00	VDT	Any	Sparkling		≤3 bar	≤15%	>2l but ≤10l
33	2204 2218 00	PDO	White	Still			≤15%	>2l but ≤10l

(Continued on next page)



Table C.1 continued.

	A	B	C	D	E	F	G	H
	HS code	GI	Color	Group	Region	Pressure	Alcohol	Volume
34	2204 2258 00	PDO	Red, rosé	Still			≤15%	>2l but ≤10l
35	2204 2279 00	PGI	White	Still			≤15%	>2l but ≤10l
36	2204 2280 00	PGI	Red, rosé	Still			≤15%	>2l but ≤10l
37	2204 2283 00	VDT	White	Still			≤15%	>2l but ≤10l
38	2204 2284 00	VDT	Red, rosé	Still			≤15%	>2l but ≤10l
39	2204 2290 00	PDO/PGI	Any	Still			>15%	>2l but ≤10l
40	2204 2291 00	VDT	Any	Still			>15%	>2l but ≤10l
41	2204 2905 00	VDT	Any	Sparkling		≤3 bar	≤15%	>10l
42	2204 2918 08	PDO	White	Still			≤15%	>10l
43	2204 2958 08	PDO	Red, rosé	Still			≤15%	>10l
44	2204 2979 08	PGI	White	Still			≤15%	>10l
45	2204 2980 08	PGI	Red, rosé	Still			≤15%	>10l
46	2204 2981 08	VDT	White	Still			≤15%	>10l
47	2204 2982 08	VDT	Red, rosé	Still			≤15%	>10l
48	2204 2990 09	PDO/PGI	Any	Still			>15%	>10l
49	2204 2991 09	VDT	Any	Still			>15%	>10l

Data source: Customs data archive of Arsenal LLC[42], European Customs Portal [45]

Table C.2: Elaborated data table from materials provided by LLC "Arsenal"

A	B	C	D	E	F	G	H	I	J	K	
ND Declaration number	G072 Registration date	YEAR	G011 Direction of movement	G16 Country of origin	G023STREET Exporter's address	CAP	G221 Contract currency code	G23 Currency exchange rate	G230 Currency exchange rate date	Euro exchange rate	
2	1000XXXX/100820/XXXXXXXX	10/08/2020	2020	ИМПОРТ	ИТАЛИЯ	47039, SAVIGNANO SUL RUBICONE, VIA XXXXX, 4	Emilia-Romagna	EUR	87.17	10/08/2020	87.1722
3	1000XXXX/161120/XXXXXXXX	16/11/2020	2020	ИМПОРТ	ИТАЛИЯ	51011, BUGGIANO, XXXXX 117	Tuscany	EUR	91.32	16/11/2020	91.3222
4	1000XXXX/161120/XXXXXXXX	16/11/2020	2020	ИМПОРТ	ИТАЛИЯ	14053, ITALY, CANELLI, XXXXX 66	Piedmont	EUR	91.32	15/11/2020	91.3222
5	1000XXXX/010620/XXXXXXXX	01/06/2020	2020	ИМПОРТ	ИТАЛИЯ	CH 1217, GENEVA, XXXXX		CHF	73.44	01/06/2020	78.5489
6	1000XXXX/090420/XXXXXXXX	09/04/2020	2020	ИМПОРТ	ИТАЛИЯ	47015 MODENA, VIA XXXXX, 15	Emilia-Romagna				82.2341
7	1000XXXX/290420/XXXXXXXX	29/04/2020	2020	ИМПОРТ	ИТАЛИЯ	23885, ARLATE DI CALCO LC, VIA XXXXX, 19	Lombardy				80.7749

Table C.2 continued.

L	M	N	O	P	Q
G31_1 Product name	G31_11 Manufacturer	G31_12 Trademark	G33 HS code	GROUP_ HS	GROUP_ name
2 ВИНО ВИНОГРАДНОЕ "CASA XXXXX SANGIOVESE"/"КАСА XXXXX САНДЖОВЕЗЕ", С ЗАЩИЩ.ГЕОГРАФИЧ.УКАЗАНИЕМ, КАТЕГОРИИ IGT, РЕГ. RUBIKON, Г/УРОЖАЯ 2019, КРАСНОЕ, СУХОЕ, СОДЕРЖ.ЭТИЛОВОГО СПИРТА-11.00 ОБ.%, НАТУРАЛЬНОЕ, В/КАЧЕСТВЕННОЕ	XXXXX	XXXXX	2204218000	Still	Still
3 ВИНО ЗАЩИЩ.НАИМЕН.МЕСТА ПРОИСХ."ВЕРМЕНТИНО XXXXX ДОК" УРОЖАЯ 2019Г. ВИНОГР,НАТУР.В/КАЧ СУХ БЕЛОЕ ТИХОЕ КРЕП.13,0 ОБ%,Б/САХ В БУТ ЕМК 0.75Л,РЕГИОН ТОСКАНА, КАТ.ДОК	XXXXX	XXXXX	2204212600	Still	Still
4 ВИНО ИГРИСТОЕ С ЗАЩ.НАИМ.МЕСТА ПРОИСХ.СЛАДКОЕ БЕЛОЕ, ВЫСОКОКАЧЕСТВЕННОЕ, НАТУРАЛЬНОЕ, КАТЕГОРИЯ D.O.C.G.РЕГИОН ПЬЕМОНТ "XXXXX АСТИ", ОБЪЕМНАЯ ДОЛЯ ЭТИЛОВОГО СПИРТА 7,5%, МАССОВАЯ КОНЦЕНТРАЦИЯ САХАРА 75-95Г/Л.	XXXXX	XXXXX	2204109100	Sparkling	Sparkling
5 ВИНО ВИНОГРАДНОЕ НАТУР.ИГРИСТОЕ, ВЫСОКОКАЧ.С ЗАЩИЩ.НАИМЕНОВ. ПО ПРОИСХ., КАТЕГОРИИ (DOC) СУХОЕ, БЕЛОЕ МАРКА "XXXXX PROSECCO" (XXXXX ПРОСЕККО) С СОД.ЭТИЛ.СП.11.5%, САХ 13-17Г/Л, ЕМК.0.75 Л, С ИЗБ ДАВЛ 4 БАРА, РЕГ. ВЕНЕТО	XXXXX	XXXXX	2204109301	Sparkling	Sparkling
6 ЛАМБРУСКО ДЕЛЛ ЭМИЛИА ИГРИСТОЕ ЖЕМЧУЖН.ВИНО С ЗАЩИЩ.ГЕОГР.УКАЗ., КАТ.IGP, РЕГ.ЭМИЛИЯ-РОМАНИЯ, "XXXXX" LAMBRUSCO DELL EMILIA", В/КАЧ.КРАСНОЕ П/СЛАДКОЕ КРЕП.7.5%ОБ., СОД.САХ.40-55 Г/Л, (ИЗБЫТ.ДАВЛ.2.2 БАР)	XXXXX	XXXXX	2204210700	Sparkling	Sparkling
7 ВИНО ВИНОГРАДНОЕ НАТУРАЛЬНОЕ ИГРИСТОЕ "МОСКАТО СПУМАНТЕ XXXXX("MOSCATO SPUMANTE XXXXX"), СОД.ЭТИЛ. СПИРТА ПО ОБЪЕМУ-7,5 ОБ.%, БЕЛОЕ, ПОЛУСЛАДКОЕ, С ИЗБЫТ. ДАВЛЕНИЕМ 3,2 БАР СОДЕРЖАНИЕ САХАРА 18-45 Г/Л.	XXXXX	XXXXX	2204109609	Sparkling	Sparkling

(Continued on next page)

Table C.2 continued.

R	S	T	U	V	W	X	Y	Z	AA	AB	AC
GI_HS	GI_NAME	Region_HS	Region_name	Color_HS	Color_name	G31_7 Quantity of goods in additional unit of measure	G42 Invoice value	G45 Customs value, RUB	Price per liter, EUR	Price_group	SSA_category
2	PGI		Emilia-Romagna	Red, rosé	Red	2,250.0	3,150.0	339,691.8	1.73	low-cost	Red.low-cost
3	PDO	Tuscany	Tuscany	White	White	792.0	6,969.6	674,866.5	9.33	premium	White.low-cost
4	PDO	Piedmont	Piedmont	White	White	9,450.0	40,320.0	4,096,038.1	4.75	premium	Sparkling.premium
5	PDO		Veneto		White	9,720.0	36,640.5	2,993,760.0	3.92	middle_range	Sparkling.middle_range
6	PGI		Emilia-Romagna		Red	4,536.0		679,387.7	1.82	low-cost	Sparkling.low-cost
7	VDI				White	3,847.5		664,098.1	2.14	entry_level	Sparkling.entry_level

Data source: Customs data archive of Arsenal LLC[42]

**Table C.3: GI acronyms**

	A	B
	Key	GI
2	PDO	PDO
3	P.D.O	PDO
4	PDO	PDO
5	P.D.O	PDO
6	PDO	PDO
7	P.D.O	PDO
8	PDO	PDO
9	P.D.O	PDO
10	DOC	PDO
11	D.O.C	PDO
12	DOC	PDO
13	D.O.C	PDO
14	DOC	PDO
15	D.O.C	PDO
16	DOC	PDO
17	D.O.C	PDO
18	ДОК	PDO
19	Д.О.К	PDO
20	ДОК	PDO
21	Д.О.К	PDO
22	ДОК	PDO
23	Д.О.К	PDO
24	DOP	PDO
25	D.O.P	PDO
26	DOP	PDO

**Table C.3 continued.**

	A	B
	Key	GI
27	D.O.P	PDO
28	DOP	PDO
29	D.O.P	PDO
30	DOP	PDO
31	D.O.P	PDO
32	ДОП	PDO
33	Д.О.П	PDO
34	ДОП	PDO
35	Д.О.П	PDO
36	DOCG	PDO
37	D.O.C.G	PDO
38	DOCG	PDO
39	D.O.C.G	PDO
40	DOCG	PDO
41	D.O.C.G	PDO
42	DOCG	PDO
43	D.O.C.G	PDO
44	ДОКГ	PDO
45	Д.О.К.Г	PDO
46	ДОКГ	PDO
47	Д.О.К.Г	PDO
48	ДОКГ	PDO
49	Д.О.К.Г	PDO
50	ДОКГ	PDO
51	Д.О.К.Г	PDO

**Table C.3 continued.**

	A	B
	Key	GI
52	IGP	PGI
53	I.G.P	PGI
54	IGP	PGI
55	I.G.P	PGI
56	IGT	PGI
57	I.G.T	PGI
58	IGT	PGI
59	I.G.T	PGI
60	PGI	PGI
61	P.G.I	PGI
62	PGI	PGI
63	P.G.I	PGI
64	ИП	PGI
65	И.Г.П	PGI
66	ИГТ	PGI
67	И.Г.Т	PGI
68	ИГТ	PGI
69	И.Г.Т	PGI
70	ПГИ	PGI
71	П.Г.И	PGI
72	VDT	VDT
73	V.D.T	VDT
74	VDT	VDT
75	V.D.T	VDT

Table C.4: Keywords and GI regions

	A	B
	Key	Region
2	`Asti	Piemonte
3	"Asti	Piemonte
4	Abruz	Abruzzo
5	Adig	Trentino-AA
6	Alba	Piemonte
7	Amalfi	Campania
8	Amaron	Veneto
9	Aost	Val d'Aosta
10	Aprutini	Abruzzo
11	Apuli	Puglia
12	Arneis	Piemonte
13	Asolani	Veneto
14	Asti	Piemonte
15	Avellino	Campania
16	Barbares	Piemonte
17	Barbera d'Al	Piemonte
18	Barbera d'As	Piemonte
19	Bardolin	Veneto
20	Barolo	Piemonte
21	Basilic	Basilicata
22	Beneventano	Campania
23	Bolgher	Toscana
24	Brachet	Piemonte
25	Brindis	Puglia
26	Brunell	Toscana
27	Calabr	Calabria
28	Caldaro	Trentino-AA
29	Campan	Campania
30	Capri	Campania
31	Chianti	Toscana
32	Chieti	Abruzzo
33	Collio	FVG
34	Custoz	Veneto
35	D`AVOLA	Sicilia
36	D'AVOLA	Sicilia
37	DAVOLA	Sicilia

Table C.4 continued.

	A	B
	Key	Region
38	Daunia	Puglia
39	Delle venez	FVG Trentino-AA Veneto
40	Dolcet	Piemonte
41	Dolomiti	Trentino-AA Veneto
42	Emilia	Emilia-Romagna
43	Etna	Sicilia
44	Eugane	Veneto
45	Falang	Campania
46	Franciac	Lombardia
47	Frascati	Lazio
48	Friul	FVG
49	Garda	Lombardia Veneto
50	Gavi	Piemonte
51	Giuli	FVG
52	Goriz	FVG
53	Imola	Emilia-Romagna
54	Irpinia	Campania
55	Isonz	FVG
56	Lambrusc	Emilia-Romagna
57	Langh	Piemonte
58	Lazio	Lazio
59	Liguria	Liguria
60	Lombar	Lombardia
61	Lugan	Lombardia Veneto
62	Mandur	Puglia
63	Mantov	Lombardia
64	Marche	Marche
65	Maremm	Toscana
66	Molise	Molise
67	Moscato d'asti	Piemonte
68	Oltrep	Lombardia
69	Orvieto	Lazio Umbria
70	Osci	Molise
71	Pavia	Lombardia
72	Piacent	Emilia-Romagna
73	Piacenza	Emilia-Romagna

Table C.4 continued.

	A	B
	Key	Region
74	Piave	Veneto
75	Piedm	Piemonte
76	Piemon	Piemonte
77	Prosec	FVG Veneto
78	Puglia	Puglia
79	Pulia	Puglia
80	Reciot	Veneto
81	Romagn	Emilia-Romagna
82	Rosso di Monta	Toscana
83	Rosso di Monte	Toscana
84	Rubicon	Emilia-Romagna
85	Ruche	Piemonte
86	Ruche	Piemonte
87	Salento	Puglia
88	Salice	Puglia
89	Sardegna	Sardinia
90	Sardin	Sardinia
91	Sicil	Sicilia
92	Soave	Veneto
93	Tarant	Puglia
94	Tauras	Campania
95	Terre sici	Sicilia
96	Toscan	Toscana
97	Trent	Trentino-AA
98	Trevenez	FVG Trentino-AA Veneto
99	Trevis	Veneto
100	Treviso	Veneto
101	Tufo	Campania
102	Tuscan	Toscana
103	Umbr	Umbria
104	Valdob	Veneto
105	Valpolic	Veneto
106	Venet	Veneto
107	Venet	Veneto
108	Venez	Veneto
109	Venezia Giu	FVG

Table C.4 continued.

	A	B
	Key	Region
110	Veron	Veneto
111	Vesuv	Campania
112	Vin Santo	Toscana
113	Vino Nobile	Toscana
114	Vultur	Basilicata
115	"Асти	Piemonte
116	`АСТИ	Piemonte
117	Абруц	Abruzzo
118	Авелин	Campania
119	Авеллин	Campania
120	Адидж	Trentino-AA
121	Адиже	Trentino-AA
122	Альба	Piemonte
123	Амальфи	Campania
124	Амарон	Veneto
125	Аоста	Val d'Aosta
126	Апрутини	Abruzzo
127	Апулиа	Puglia
128	Арнеис	Piemonte
129	Асолани	Veneto
130	Асти	Piemonte
131	Базилик	Basilicata
132	Барбар	Piemonte
133	Барбера д'ал	Piemonte
134	Барбера д'ас	Piemonte
135	Бардол	Veneto
136	Барол	Piemonte
137	Беневентано	Campania
138	Болгер	Toscana
139	Бракет	Piemonte
140	Брачет	Piemonte
141	Бриндиз	Puglia
142	Брунел	Toscana
143	Вальдоб	Veneto
144	Вальпол	Veneto
145	Везув	Campania

Table C.4 continued.

	A	B
	Key	Region
146	Венез	Veneto
147	Венет	Veneto
148	Венет	Veneto
149	Венец	Veneto
150	Венеция Дж	FVG
151	Верон	Veneto
152	Вин сант	Toscana
153	Вино Нобиле	Toscana
154	Вультур	Basilicata
155	Гави	Piemonte
156	Гарда	Lombardia Veneto
157	Гориц	FVG
158	Д`АВОЛА	Sicilia
159	д'авола	Sicilia
160	Д'АВОЛА	Sicilia
161	Давол	Sicilia
162	Дауни	Puglia
163	Делле венец	FVG Trentino-AA Veneto
164	Джули	FVG
165	Доломити	Trentino-AA Veneto
166	Дольчет	Piemonte
167	Изонц	FVG
168	Имола	Emilia-Romagna
169	Ирпини	Campania
170	Калабр	Calabria
171	Кальдар	Trentino-AA
172	Кампан	Campania
173	Капри	Campania
174	Коллио	FVG
175	Кустоз	Veneto
176	Кьети	Abruzzo
177	Кьянт	Toscana
178	Ламбрус	Emilia-Romagna
179	Ланг	Piemonte
180	Лацио	Lazio
181	Лигури	Liguria

Table C.4 continued.

	A	B
	Key	Region
182	Ломбар	Lombardia
183	Лугана	Lombardia Veneto
184	Люган	Lombardia Veneto
185	Мандур	Puglia
186	Мантов	Lombardia
187	Маремм	Toscana
188	Марке	Marche
189	Молиз	Molise
190	Москаго д'асти	Piemonte
191	Олтреп	Lombardia
192	Ольтреп	Lombardia
193	Орвието	Lazio Umbria
194	Оши	Molise
195	Павиа	Lombardia
196	Павия	Lombardia
197	Пиав	Veneto
198	Просек	FVG Veneto
199	Пулиа	Puglia
200	Пулия	Puglia
201	Пулья	Puglia
202	Пьемо	Piemonte
203	Пьяченг	Emilia-Romagna
204	Пьяченца	Emilia-Romagna
205	Речот	Veneto
206	Ричот	Veneto
207	Романь	Emilia-Romagna
208	Россо ди Монта	Toscana
209	Россо ди Монте	Toscana
210	Рубикон	Emilia-Romagna
211	Саленто	Puglia
212	Саличе	Puglia
213	Сарден	Sardinia
214	Сардин	Sardinia
215	Сицил	Sicilia
216	Соаве	Veneto
217	Тарант	Puglia

**Table C.4** *continued.*

	<b>A</b>	<b>B</b>
	<b>Key</b>	<b>Region</b>
218	Таураз	Campania
219	Терре си	Sicilia
220	Тоскан	Toscana
221	Тревенец	FVG Trentino-AA Veneto
222	Тревиз	Veneto
223	Трент	Trentino-AA
224	Тривенет	FVG Trentino-AA Veneto
225	Туфо	Campania
226	Умбр	Umbria
227	Умрия	Umbria
228	Фаланг	Campania
229	Франчак	Lombardia
230	Франчиак	Lombardia
231	Фраскат	Lazio
232	Фриул	FVG
233	Эмилия	Emilia-Romagna
234	Этна	Sicilia
235	Эуган	Veneto



Table C.5: *2012 Imports of Italian wine to Russia by region and by SSA category, liters*

SSA category <sup>a</sup>	Abruzzo	Aosta Valley	Apulia	Basilicata	Calabria	Campania	Emilia-Romagna	FVG	Lazio	Liguria	Lombardy	Marche	Molise	Piedmont	Sardinia	Sicily	Trentino-Alto Adige	Tuscany	Umbria	Veneto	Italy total	
WH.LC	24,686	0	4,392	0	0	4,500	47,736	0	2,160	0	0	2,700	0	1,800	1,351	70,619	0	52,920	0	414,402	627,264	
WH.EL	240,566	0	27,810	0	0	450	186,489	65,835	69,310	0	0	0	0	78,147	12,641	685,017	29,521	144,178	103,605	2,450,939	4,094,507	
WH.MR	18,545	0	8,072	0	0	1,466	4,050	53,471	35,794	0	12,994	3,317	198	70,034	19,750	152,852	32,972	88,817	127,106	513,396	1,142,831	
WH.PR	14,441	1,515	20,133	315	0	32,030	3,510	220,702	11,642	720	11,870	11,513	272	338,684	23,459	110,879	331,494	377,592	62,377	164,021	1,737,167	
RS.LC	0	0	5,850	0	0	0	0	0	0	0	0	0	0	0	0	1,710	0	0	0	161,272	168,832	
RS.EL	1,296	0	83,209	0	0	0	0	2,565	0	0	4,050	0	0	0	0	5,447	0	7,020	7,380	95,330	206,297	
RS.MR	4,982	0	2,493	0	0	0	0	3,150	0	0	144	0	0	367	287	23,306	0	17,622	8,280	38,086	98,715	
RS.PR	2,154	0	2,327	135	720	2,115	0	47	810	0	1,290	0	0	7,196	1,073	7,832	5,850	15,029	2	8,115	54,692	
RD.LC	158,309	0	34,905	0	0	3,150	62,486	0	0	0	0	2,700	0	21,728	3,150	138,879	0	224,063	0	624,526	1,273,895	
RD.EL	908,982	0	1,159,312	0	0	0	486,906	14,157	13,500	0	4,002	3	0	248,680	14,625	712,112	23,495	2,723,302	29,297	1,514,637	7,853,008	
RD.MR	20,543	0	50,658	0	0	1,733	18,902	21,784	1,620	0	2,268	20,057	608	43,693	18,008	241,063	27,452	830,038	56,747	353,516	1,708,684	
RD.PR	52,940	315	63,875	1,170	527	18,178	14,360	19,630	995	270	7,320	29,058	503	224,042	24,675	173,706	43,717	1,323,987	20,450	430,439	2,450,154	
SP.LC	0	0	68,423	0	0	0	8,724,186	0	0	0	0	0	0	15,474	0	0	0	0	0	0	4,950	8,813,033
SP.EL	0	0	1,800	0	0	0	672,394	0	684	0	0	0	0	570,352	0	0	0	0	0	0	100,400	1,345,629
SP.MR	0	0	0	0	0	0	43,572	2,520	0	0	378	0	0	2,572,191	0	3,424	0	0	0	1,168,255	3,790,340	
SP.PR	716	0	0	0	0	0	9,637	40,237	0	0	27,821	5,130	0	4,304,159	0	893	21,585	0	0	733,262	5,143,438	
<b>Total</b>	<b>1,448,158</b>	<b>1,830</b>	<b>1,533,257</b>	<b>1,620</b>	<b>1,247</b>	<b>63,622</b>	<b>10,274,227</b>	<b>444,097</b>	<b>136,514</b>	<b>990</b>	<b>72,135</b>	<b>74,477</b>	<b>1,580</b>	<b>8,496,545</b>	<b>119,016</b>	<b>2,327,736</b>	<b>516,085</b>	<b>5,804,566</b>	<b>415,241</b>	<b>8,775,543</b>	<b>40,508,485</b>	

Source: own elaboration of Customs data archive of Arsenal LLC[42]

<sup>a</sup> WH.LC — White still wine, low-cost

WH.EL — White still wine, entry level

WH.MR — White still wine, middle range

WH.PR — White still wine, premium

RS.LC — Rosé still wine, low-cost

RS.EL — Rosé still wine, entry level

RS.MR — Rosé still wine, middle range

RS.PR — Rosé still wine, premium

RD.LC — Red still wine, low-cost

RD.EL — Red still wine, entry level

RD.MR — Red still wine, middle range

RD.PR — Red still wine, premium

SP.LC — Sparkling wine, low-cost

SP.EL — Sparkling wine, entry level

SP.MR — Sparkling wine, middle range

SP.PR — Sparkling wine, premium

Table C.6: *2013 Imports of Italian wine to Russia by region and by SSA category, liters*

SSA category <sup>a</sup>	Abruzzo	Aosta Valley	Apulia	Basilicata	Calabria	Campania	Emilia-Romagna	FVG	Lazio	Liguria	Lombardy	Marche	Molise	Piedmont	Sardinia	Sicily	Trentino-Alto Adige	Tuscany	Umbria	Veneto	Italy total	
WH.LC	24,340	0	0	0	0	9,113	10,470	0	1,800	0	0	2,700	0	14,460	0	41,855	0	28,871	3,605	540,593	<b>677,805</b>	
WH.EL	201,899	0	164,322	0	0	7,351	293,088	98,587	75,779	0	8,802	8,516	2	55,733	4,052	751,154	57,395	160,687	134,705	3,183,168	<b>5,205,239</b>	
WH.MR	22,421	0	17,744	0	0	2,453	534	78,964	38,275	0	8,100	4,385	1,161	88,217	7,650	150,683	77,351	82,439	150,332	624,288	<b>1,354,992</b>	
WH.PR	12,305	360	14,289	0	0	23,519	885	256,943	6,081	6,975	16,902	15,098	504	366,680	40,506	152,947	372,970	361,342	77,528	174,348	<b>1,900,181</b>	
RS.LC	2	0	900	0	0	0	5	0	0	0	0	0	0	2	0	2,700	0	3,938	0	59,285	<b>66,831</b>	
RS.EL	4,003	0	166,561	0	0	0	0	452	0	0	60,705	0	0	5	6	31,901	2	10,966	14,490	127,802	<b>416,891</b>	
RS.MR	2,756	0	953	0	0	0	0	2,925	0	0	1,800	0	0	275	565	23,783	0	31,346	4,527	65,237	<b>134,164</b>	
RS.PR	2,737	0	450	0	1,350	2,130	0	18,217	225	0	4,873	0	0	27,034	1,385	9,450	5,850	37,944	2,885	32,825	<b>147,353</b>	
RD.LC	67,397	0	25,113	0	0	10,832	43,230	0	1,350	0	452	3,150	0	70,740	0	144,189	0	91,643	2	589,313	<b>1,047,410</b>	
RD.EL	946,981	0	980,226	0	0	8,350	566,581	29,464	2,700	0	35,550	7,886	0	268,526	4,547	825,540	32,297	2,798,356	54,159	1,196,237	<b>7,757,398</b>	
RD.MR	45,611	0	61,370	0	855	1,328	25,425	35,179	1,757	0	2,160	45,990	833	60,582	947	259,909	13,433	1,204,582	40,001	487,329	<b>2,287,288</b>	
RD.PR	35,538	405	64,745	1,526	1,125	15,645	297	26,957	18,831	315	8,636	36,027	1,496	258,153	32,062	234,631	41,368	1,346,779	29,365	515,917	<b>2,669,814</b>	
SP.LC	0	0	194,472	0	0	0	12,076,381	0	0	0	61,425	0	0	55,053	0	0	0	0	0	0	12,240	<b>12,399,571</b>
SP.EL	0	0	6,228	0	0	0	1,510,805	54,992	1,026	0	1,877	0	0	265,829	0	0	0	0	0	0	118,404	<b>1,959,160</b>
SP.MR	0	0	0	0	0	0	45,072	52,236	0	0	3,722	3,240	0	3,871,696	0	6,413	0	0	0	1,852,264	<b>5,834,642</b>	
SP.PR	126	0	0	0	0	0	10,973	893,941	0	0	19,214	2,250	0	7,053,968	0	9,810	22,922	0	0	929,102	<b>8,942,306</b>	
<b>Total</b>	<b>1,366,113</b>	<b>765</b>	<b>1,697,372</b>	<b>1,526</b>	<b>3,330</b>	<b>80,719</b>	<b>14,583,746</b>	<b>1,548,854</b>	<b>147,823</b>	<b>7,290</b>	<b>234,217</b>	<b>129,242</b>	<b>3,995</b>	<b>12,456,949</b>	<b>91,720</b>	<b>2,644,962</b>	<b>623,585</b>	<b>6,158,890</b>	<b>511,598</b>	<b>10,508,350</b>	<b>52,801,043</b>	

Source: own elaboration of Customs data archive of Arsenal LLC[42]

<sup>a</sup> WH.LC — White still wine, low-cost

WH.EL — White still wine, entry level

WH.MR — White still wine, middle range

WH.PR — White still wine, premium

RS.LC — Rosé still wine, low-cost

RS.EL — Rosé still wine, entry level

RS.MR — Rosé still wine, middle range

RS.PR — Rosé still wine, premium

RD.LC — Red still wine, low-cost

RD.EL — Red still wine, entry level

RD.MR — Red still wine, middle range

RD.PR — Red still wine, premium

SP.LC — Sparkling wine, low-cost

SP.EL — Sparkling wine, entry level

SP.MR — Sparkling wine, middle range

SP.PR — Sparkling wine, premium

Table C.7: *2014 Imports of Italian wine to Russia by region and by SSA category, liters*

SSA category <sup>a</sup>	Abruzzo	Aosta Valley	Apulia	Basilicata	Calabria	Campania	Emilia-Romagna	FVG	Lazio	Liguria	Lombardy	Marche	Molise	Piedmont	Sardinia	Sicily	Trentino-Alto Adige	Tuscany	Umbria	Veneto	Italy total
WH.LC	20,940	0	5,040	0	0	10,008	0	0	450	0	0	801	0	5,688	0	55,517	0	29,340	0	327,506	455,290
WH.EL	225,443	0	154,821	428	0	3,222	283,589	141,488	41,261	0	17,289	12,240	175,275	78,683	22,282	758,312	61,540	172,395	109,578	3,347,598	5,605,441
WH.MR	41,019	0	32,585	0	0	10,881	3,848	87,160	47,150	0	4,599	5,303	149	220,646	11,999	186,292	120,326	75,960	181,323	899,161	1,928,397
WH.PR	7,359	972	7,877	225	0	12,927	1,075	267,925	13,266	4,838	18,225	18,266	185	463,201	39,331	174,555	397,853	478,155	61,058	194,350	2,161,642
RS.LC	225	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	720	945
RS.EL	1,314	0	61,826	428	0	0	0	1,125	0	0	23,805	0	0	72	0	34,713	12,870	8,730	6,300	138,888	290,070
RS.MR	8,231	0	855	0	0	9	0	900	0	0	2,294	0	0	1,681	450	19,656	0	38,090	4,995	87,102	164,261
RS.PR	2,471	0	339	0	1,350	2	0	0	945	0	4,847	0	0	12,200	3,402	7,328	2,925	22,426	1,463	20,808	80,503
RD.LC	92,831	0	41,042	0	0	7,758	23,382	0	0	0	0	216	0	28,354	0	129,699	2	34,350	0	351,223	708,856
RD.EL	1,034,735	0	996,815	428	0	15,602	493,520	40,874	0	0	144	16,967	0	287,918	23,272	758,755	34,155	2,876,856	45,698	1,137,241	7,762,976
RD.MR	87,665	0	115,640	288	0	5,693	25,335	19,674	2,160	0	1,170	52,349	1,040	131,668	13,410	324,401	23,717	1,367,765	5,687	580,914	2,758,573
RD.PR	50,582	225	85,148	990	0	11,879	2,351	18,460	56,439	0	4,637	33,278	1,248	306,999	26,710	244,586	38,417	1,386,207	21,718	513,608	2,803,479
SP.LC	0	0	45,451	0	0	0	13,443,449	0	0	0	29,484	5,670	0	119,678	0	0	0	0	0	7,700	13,651,431
SP.EL	0	0	749	0	0	0	1,570,327	124,065	0	0	16,830	0	0	426,796	0	0	0	0	0	514,090	2,652,857
SP.MR	0	0	0	0	0	0	41,519	88,730	6	0	3,456	3,960	0	5,177,974	0	0	0	0	0	1,808,878	7,124,523
SP.PR	194	0	0	0	0	0	5,097	1,138,491	0	0	77,616	0	0	5,859,507	2	90	12,373	38	0	681,464	7,774,870
<b>Total</b>	<b>1,573,006</b>	<b>1,197</b>	<b>1,548,185</b>	<b>2,786</b>	<b>1,350</b>	<b>77,980</b>	<b>15,893,492</b>	<b>1,928,890</b>	<b>161,676</b>	<b>4,838</b>	<b>204,396</b>	<b>149,048</b>	<b>177,896</b>	<b>13,121,061</b>	<b>140,858</b>	<b>2,693,903</b>	<b>704,177</b>	<b>6,490,311</b>	<b>437,818</b>	<b>10,611,249</b>	<b>55,924,114</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42]

<sup>a</sup> WH.LC — White still wine, low-cost

WH.EL — White still wine, entry level

WH.MR — White still wine, middle range

WH.PR — White still wine, premium

RS.LC — Rosé still wine, low-cost

RS.EL — Rosé still wine, entry level

RS.MR — Rosé still wine, middle range

RS.PR — Rosé still wine, premium

RD.LC — Red still wine, low-cost

RD.EL — Red still wine, entry level

RD.MR — Red still wine, middle range

RD.PR — Red still wine, premium

SP.LC — Sparkling wine, low-cost

SP.EL — Sparkling wine, entry level

SP.MR — Sparkling wine, middle range

SP.PR — Sparkling wine, premium

Table C.8: *2015 Imports of Italian wine to Russia by region and by SSA category, liters*

SSA category <sup>a</sup>	Abruzzo	Aosta Valley	Apulia	Basilicata	Calabria	Campania	Emilia-Romagna	FVG	Lazio	Liguria	Lombardy	Marche	Molise	Piedmont	Sardinia	Sicily	Trentino-Alto Adige	Tuscany	Umbria	Veneto	Italy total
WH.LC	30,690	0	115,626	0	0	7,650	2,700	0	0	0	4,946	5,627	0	14,121	0	73,901	14,630	31,500	0	188,366	489,755
WH.EL	272,101	0	169,514	0	0	8,730	236,264	176,064	23,405	0	12,836	6,486	365,963	73,063	34,104	540,465	86,258	211,523	92,449	2,929,162	5,238,386
WH.MR	23,540	0	44,447	450	0	11,768	5,670	191,867	37,760	0	3,156	30,173	225	282,092	7,155	145,095	69,707	121,238	144,873	555,925	1,675,138
WH.PR	3,956	1,425	6,743	0	0	28,760	1,191	149,343	10,017	9,810	18,215	17,375	0	387,795	30,167	95,284	259,169	204,102	30,705	147,155	1,401,210
RS.LC	0	0	0	0	0	0	0	0	0	0	2,252	0	0	1,800	0	0	0	0	0	495	4,547
RS.EL	563	0	74,543	135	0	0	0	1,332	0	0	22,896	2,250	0	2	0	28,325	14,940	3,245	540	158,843	307,613
RS.MR	2,081	0	909	0	0	0	0	0	0	0	2,690	0	0	1,625	2,925	21,044	0	19,485	2,918	53,842	107,517
RS.PR	338	0	43	0	0	779	0	284	0	0	1,957	221	0	398	1,944	10,289	2,000	9,270	540	16,303	44,363
RD.LC	120,821	0	48,647	0	0	10,791	6,750	0	0	0	0	7,314	0	19,170	0	124,837	6,842	29,124	0	217,266	591,562
RD.EL	1,047,117	0	1,104,101	0	0	14,288	424,140	76,166	3,398	0	0	11,529	0	232,931	39,680	854,127	46,396	1,920,657	20,439	928,155	6,723,122
RD.MR	57,817	0	156,118	0	0	522	16,740	8,123	0	0	7,721	38,421	0	242,351	3,735	241,301	25,155	940,160	14,459	369,957	2,122,579
RD.PR	26,399	615	97,188	2,673	0	16,093	5,427	7,762	20,274	0	2,858	27,460	1,481	257,339	15,926	118,616	25,151	947,588	7,352	451,887	2,032,087
SP.LC	0	0	20,866	0	0	0	9,234,277	0	0	0	43,469	0	0	4,500	0	0	0	0	0	64,871	9,367,982
SP.EL	0	0	25,754	0	0	0	547,180	1,350	3,420	0	6,003	0	0	40,991	0	0	0	0	0	459,987	1,084,685
SP.MR	0	0	6	0	0	0	37,318	707,151	4,104	0	7,371	0	0	5,229,998	0	0	3,465	0	0	1,768,997	7,758,410
SP.PR	41	0	76	0	0	0	3,422	630,268	0	0	37,976	2	0	1,270,522	0	540	14,744	1,892	0	569,664	2,529,144
<b>Total</b>	<b>1,585,460</b>	<b>2,040</b>	<b>1,864,581</b>	<b>3,258</b>	<b>0</b>	<b>99,379</b>	<b>10,521,077</b>	<b>1,949,708</b>	<b>102,378</b>	<b>9,810</b>	<b>174,343</b>	<b>146,856</b>	<b>367,668</b>	<b>8,058,696</b>	<b>135,635</b>	<b>2,253,822</b>	<b>568,457</b>	<b>4,439,783</b>	<b>314,273</b>	<b>8,880,874</b>	<b>41,478,098</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42]

<sup>a</sup> WH.LC — White still wine, low-cost

WH.EL — White still wine, entry level

WH.MR — White still wine, middle range

WH.PR — White still wine, premium

RS.LC — Rosé still wine, low-cost

RS.EL — Rosé still wine, entry level

RS.MR — Rosé still wine, middle range

RS.PR — Rosé still wine, premium

RD.LC — Red still wine, low-cost

RD.EL — Red still wine, entry level

RD.MR — Red still wine, middle range

RD.PR — Red still wine, premium

SP.LC — Sparkling wine, low-cost

SP.EL — Sparkling wine, entry level

SP.MR — Sparkling wine, middle range

SP.PR — Sparkling wine, premium

Table C.9: *2016 Imports of Italian wine to Russia by region and by SSA category, liters*

SSA category <sup>a</sup>	Abruzzo	Aosta Valley	Apulia	Basilicata	Calabria	Campania	Emilia-Romagna	FVG	Lazio	Liguria	Lombardy	Marche	Molise	Piedmont	Sardinia	Sicily	Trentino-Alto Adige	Tuscany	Umbria	Veneto	Italy total
WH.LC	18,720	0	82,044	0	0	7,200	23,994	8	0	0	200	5,625	0	1,320	0	292,505	0	25,344	0	252,499	709,458
WH.EL	339,625	27	293,747	90	0	3,240	267,282	187,686	18,813	0	9,601	10,539	251,100	109,347	38,228	506,927	198,410	173,744	75,046	3,557,259	6,040,709
WH.MR	21,381	0	43,542	2,343	2,254	16,542	2,205	128,190	28,391	0	1,811	20,745	270	195,675	6,525	158,003	82,374	63,579	100,331	567,170	1,441,329
WH.PR	7,307	1,107	14,930	90	454	21,851	1,152	220,601	1,847	12,323	53,645	15,503	81	411,857	40,094	71,852	325,666	240,618	28,880	179,551	1,649,406
RS.LC	0	0	0	0	0	0	0	0	0	0	1,125	3,600	0	1,800	0	1,350	0	0	0	990	8,865
RS.EL	563	0	126,332	95	0	0	0	783	0	0	22,761	0	0	675	0	35,332	19,215	2,668	0	104,133	312,555
RS.MR	7,857	0	3,600	450	0	900	0	0	0	0	2,004	0	0	2,678	0	15,717	0	20,081	1,944	92,042	147,273
RS.PR	1,800	0	688	0	1,264	1,629	0	0	0	0	2,124	994	0	225	1,089	9,359	3,971	13,037	270	11,601	48,051
RD.LC	195,539	0	227,342	0	0	6,300	27,366	6	0	0	200	7,313	0	28,590	0	94,302	0	43,200	0	104,444	734,601
RD.EL	1,179,015	0	1,146,519	0	0	9,288	374,808	87,144	9,315	0	892	20,205	0	288,098	26,969	814,730	60,458	2,027,773	11,565	854,177	6,910,955
RD.MR	83,519	0	177,188	135	2,254	7,124	7,281	9,789	0	0	7,202	45,323	0	146,660	9,266	227,813	16,551	917,311	12,001	368,983	2,038,397
RD.PR	32,829	675	119,156	2,973	413	17,710	1,800	22,380	4,257	0	2,150	26,166	1,440	224,559	21,640	155,886	43,067	1,056,149	8,403	565,006	2,306,658
SP.LC	0	0	40,590	0	0	0	9,081,983	0	0	0	4,122	0	0	9,401	0	0	0	0	0	32,239	9,168,335
SP.EL	0	0	0	0	0	0	409,283	552	0	0	12,960	0	0	230,441	990	0	0	0	0	248,381	902,607
SP.MR	0	0	0	0	0	0	19,062	300,261	2,394	0	2,733	0	0	4,674,305	0	0	3,618	0	0	3,037,449	8,039,822
SP.PR	270	0	112	0	0	0	1,267	105,521	0	0	26,587	0	0	1,319,366	0	229	7,349	0	0	971,359	2,432,059
<b>Total</b>	<b>1,888,424</b>	<b>1,809</b>	<b>2,275,788</b>	<b>6,176</b>	<b>6,638</b>	<b>91,783</b>	<b>10,217,483</b>	<b>1,062,920</b>	<b>65,016</b>	<b>12,323</b>	<b>150,116</b>	<b>156,012</b>	<b>252,891</b>	<b>7,644,997</b>	<b>144,800</b>	<b>2,384,003</b>	<b>760,678</b>	<b>4,583,503</b>	<b>238,439</b>	<b>10,947,282</b>	<b>42,891,079</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42]

<sup>a</sup> WH.LC — White still wine, low-cost

WH.EL — White still wine, entry level

WH.MR — White still wine, middle range

WH.PR — White still wine, premium

RS.LC — Rosé still wine, low-cost

RS.EL — Rosé still wine, entry level

RS.MR — Rosé still wine, middle range

RS.PR — Rosé still wine, premium

RD.LC — Red still wine, low-cost

RD.EL — Red still wine, entry level

RD.MR — Red still wine, middle range

RD.PR — Red still wine, premium

SP.LC — Sparkling wine, low-cost

SP.EL — Sparkling wine, entry level

SP.MR — Sparkling wine, middle range

SP.PR — Sparkling wine, premium

**Table C.10: 2017 Imports of Italian wine to Russia by region and by SSA category, liters**

SSA category <sup>a</sup>	Abruzzo	Aosta Valley	Apulia	Basilicata	Calabria	Campania	Emilia-Romagna	FVG	Lazio	Liguria	Lombardy	Marche	Molise	Piedmont	Sardinia	Sicily	Trentino-Alto Adige	Tuscany	Umbria	Veneto	Italy total
WH.LC	80,280	0	60,876	0	0	1,800	145,783	0	0	0	3,380	0	0	1,335	0	534,716	0	20,529	0	502,033	1,350,731
WH.EL	331,799	0	506,684	0	0	9,524	459,063	181,862	25,853	0	52,245	32,176	284,288	30,836	34,911	983,330	221,104	294,178	136,593	5,138,742	8,723,187
WH.MR	54,816	0	103,189	6,917	3,645	12,113	11,127	136,058	32,652	0	540	10,047	45	264,372	5,513	186,713	119,705	136,628	102,996	853,428	2,040,501
WH.PR	7,841	369	21,752	968	3,090	27,623	1,823	267,250	9,286	15,161	101,978	20,600	68	546,656	33,758	93,345	377,034	337,419	29,051	263,880	2,158,947
RS.LC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,890	0	0	0	657	2,547
RS.EL	1,022	0	208,568	0	0	0	16,763	486	0	0	6,163	0	0	3,911	0	22,699	19,305	2,580	900	180,067	462,462
RS.MR	9,527	0	1,061	450	0	0	0	0	0	0	573	0	0	1,220	0	8,555	2,700	20,387	1,575	101,382	147,429
RS.PR	1,127	0	4,571	135	1,848	2,277	0	0	90	0	3,870	2,250	0	2,390	1,148	5,468	6,041	15,593	1,332	25,205	73,343
RD.LC	255,454	0	405,534	0	0	0	91,223	0	0	0	350	0	0	101,380	0	510,803	0	28,211	0	306,887	1,699,842
RD.EL	1,754,551	0	2,319,598	0	0	21,252	616,445	57,401	3,963	0	2,993	56,426	1,755	472,840	18,257	1,719,887	74,660	2,965,284	15,375	1,138,134	11,238,819
RD.MR	191,247	0	421,875	1,022	4,995	8,159	34,569	26,496	16,046	0	6,255	86,945	0	157,012	3,150	330,056	34,650	1,386,052	12,136	497,619	3,218,282
RD.PR	49,430	338	361,252	25,889	3,492	24,024	4,574	41,791	42,866	140	2,978	35,666	1,935	371,383	19,151	142,990	45,713	1,355,776	8,699	894,096	3,432,177
SP.LC	0	0	45,225	0	0	0	11,982,660	0	0	0	4,256	0	0	6	0	9	0	0	0	28,457	12,060,614
SP.EL	0	0	945	0	0	0	450,754	2,138	0	0	15,660	0	0	39,443	0	0	0	0	0	168,431	677,370
SP.MR	0	0	0	0	0	0	36,431	449,454	0	0	3,375	0	0	5,167,700	0	450	891	0	0	3,647,121	9,305,422
SP.PR	0	0	0	0	0	0	5,144	239,909	0	0	23,661	0	0	2,807,584	0	270	20,408	0	0	2,140,306	5,237,281
<b>Total</b>	<b>2,737,093</b>	<b>707</b>	<b>4,461,130</b>	<b>35,379</b>	<b>17,070</b>	<b>106,770</b>	<b>13,856,359</b>	<b>1,402,844</b>	<b>130,754</b>	<b>15,300</b>	<b>228,277</b>	<b>244,108</b>	<b>288,090</b>	<b>9,968,066</b>	<b>115,886</b>	<b>4,541,178</b>	<b>922,209</b>	<b>6,562,635</b>	<b>308,656</b>	<b>15,886,444</b>	<b>61,828,954</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42]

<sup>a</sup> WH.LC — White still wine, low-cost

WH.EL — White still wine, entry level

WH.MR — White still wine, middle range

WH.PR — White still wine, premium

RS.LC — Rosé still wine, low-cost

RS.EL — Rosé still wine, entry level

RS.MR — Rosé still wine, middle range

RS.PR — Rosé still wine, premium

RD.LC — Red still wine, low-cost

RD.EL — Red still wine, entry level

RD.MR — Red still wine, middle range

RD.PR — Red still wine, premium

SP.LC — Sparkling wine, low-cost

SP.EL — Sparkling wine, entry level

SP.MR — Sparkling wine, middle range

SP.PR — Sparkling wine, premium

**Table C.11: 2018 Imports of Italian wine to Russia by region and by SSA category, liters**

SSA category <sup>a</sup>	Abruzzo	Aosta Valley	Apulia	Basilicata	Calabria	Campania	Emilia-Romagna	FVG	Lazio	Liguria	Lombardy	Marche	Molise	Piedmont	Sardinia	Sicily	Trentino-Alto Adige	Tuscany	Umbria	Veneto	Italy total
<b>WH.LC</b>	438,744	0	95,947	0	0	3	359,179	6	1,080	0	6,756	0	0	660	0	430,741	6	23,318	10,082	682,257	<b>2,048,778</b>
<b>WH.EL</b>	325,606	0	848,179	18	0	3,752	318,988	170,640	30,194	0	200,875	6,275	93,263	58,143	6,353	1,062,929	170,641	213,007	46,939	4,612,970	<b>8,168,770</b>
<b>WH.MR</b>	36,247	0	62,222	6,705	4,317	25,607	8,423	146,453	64,346	0	7,961	3,467	135	307,449	11,106	307,346	144,821	97,970	65,660	944,968	<b>2,245,200</b>
<b>WH.PR</b>	14,988	2,250	19,596	1,994	1,386	28,937	4,289	314,397	7,978	12,240	113,661	20,903	54	673,684	46,012	100,918	455,501	360,174	30,030	344,768	<b>2,553,760</b>
<b>RS.LC</b>	7,865	0	19,116	0	0	0	0	2	0	0	0	0	0	0	0	39,375	0	0	0	0	<b>66,357</b>
<b>RS.EL</b>	0	0	215,604	5	0	0	16,200	630	0	0	56,889	0	0	3,510	0	24,093	10,440	207	0	244,523	<b>572,100</b>
<b>RS.MR</b>	6,071	0	7,687	0	0	900	0	0	0	0	3	3	0	0	450	16,897	4,887	14,759	0	90,520	<b>142,177</b>
<b>RS.PR</b>	1,849	0	3,129	0	2,757	1,820	225	6,147	677	0	1,604	1,665	0	3,773	1,496	11,033	9,021	22,794	2,334	25,401	<b>95,724</b>
<b>RD.LC</b>	356,509	0	305,414	0	0	6	344,038	0	0	0	0	0	0	3,473	0	323,406	0	25,350	0	168,825	<b>1,527,020</b>
<b>RD.EL</b>	1,682,870	0	2,204,060	9	0	17,952	626,750	42,128	544	0	6,849	34,452	6,093	304,784	8,777	1,635,170	24,226	2,593,797	5,025	941,739	<b>10,135,226</b>
<b>RD.MR</b>	196,239	0	414,751	0	2,703	12,399	19,310	39,157	7,254	0	10,643	30,313	0	91,001	7,232	234,699	44,150	1,299,965	7,173	419,302	<b>2,836,289</b>
<b>RD.PR</b>	35,059	810	382,016	11,368	2,537	28,994	7,413	63,833	26,273	0	3,537	30,212	2,489	335,208	23,749	160,148	46,759	1,269,066	13,868	874,243	<b>3,317,578</b>
<b>SP.LC</b>	0	0	0	0	0	0	11,074,617	0	0	0	4,725	0	0	8	0	0	2	0	0	14,808	<b>11,094,160</b>
<b>SP.EL</b>	0	0	26,280	0	0	0	767,909	3,465	0	0	19,616	0	0	106,949	0	0	2	0	0	143,499	<b>1,067,719</b>
<b>SP.MR</b>	0	0	0	0	0	0	28,946	891,008	0	0	12,559	1,804	0	6,904,862	0	1,080	3,191	0	0	4,358,659	<b>12,202,107</b>
<b>SP.PR</b>	0	0	0	0	0	0	9,063	177,669	0	0	27,595	1,128	0	1,750,231	675	443	35,186	363	0	2,972,665	<b>4,975,017</b>
<b>Total</b>	<b>3,102,046</b>	<b>3,060</b>	<b>4,604,000</b>	<b>20,099</b>	<b>13,700</b>	<b>120,369</b>	<b>13,585,348</b>	<b>1,855,535</b>	<b>138,344</b>	<b>12,240</b>	<b>473,271</b>	<b>130,220</b>	<b>102,033</b>	<b>10,543,733</b>	<b>105,850</b>	<b>4,348,279</b>	<b>948,831</b>	<b>5,920,768</b>	<b>181,110</b>	<b>16,839,147</b>	<b>63,047,982</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42]

<sup>a</sup> **WH.LC** — White still wine, low-cost

**WH.EL** — White still wine, entry level

**WH.MR** — White still wine, middle range

**WH.PR** — White still wine, premium

**RS.LC** — Rosé still wine, low-cost

**RS.EL** — Rosé still wine, entry level

**RS.MR** — Rosé still wine, middle range

**RS.PR** — Rosé still wine, premium

**RD.LC** — Red still wine, low-cost

**RD.EL** — Red still wine, entry level

**RD.MR** — Red still wine, middle range

**RD.PR** — Red still wine, premium

**SP.LC** — Sparkling wine, low-cost

**SP.EL** — Sparkling wine, entry level

**SP.MR** — Sparkling wine, middle range

**SP.PR** — Sparkling wine, premium

Table C.12: 2019 Imports of Italian wine to Russia by region and by SSA category, liters

SSA category <sup>a</sup>	Abruzzo	Aosta Valley	Apulia	Basilicata	Calabria	Campania	Emilia-Romagna	FVG	Lazio	Liguria	Lombardy	Marche	Molise	Piedmont	Sardinia	Sicily	Trentino-Alto Adige	Tuscany	Umbria	Veneto	Italy total
WH.LC	723,138	0	65,057	0	0	2	457,428	14	5,400	0	2,550	1,125	0	2	8	803,510	0	45,402	27,656	980,505	3,111,794
WH.EL	460,558	0	936,143	46	0	5,403	334,570	575,128	11,459	0	198,992	9,341	12,938	32,098	25,403	1,429,694	201,021	313,928	65,799	5,973,289	10,585,807
WH.MR	76,570	0	63,800	11,205	4,133	16,707	14,522	149,174	73,751	0	24,863	11,536	45	91,834	24,293	419,203	269,722	354,928	66,253	967,427	2,639,963
WH.PR	26,846	1,305	27,585	2,432	979	38,891	3,144	317,188	16,874	26,075	137,538	25,886	131	570,960	49,783	134,789	528,351	373,915	39,156	348,186	2,670,013
RS.LC	6,750	0	23,681	0	0	0	4	0	0	0	37,332	0	0	0	2	37,420	0	3	0	9,951	115,142
RS.EL	3,345	0	195,701	0	0	0	41,967	3	0	0	101,390	0	0	1,354	0	26,162	16,200	8	0	481,326	867,455
RS.MR	26,294	0	15,901	900	2	1,350	0	1,692	0	0	0	567	0	0	0	3,666	9,452	51,706	1,625	103,354	216,508
RS.PR	6,854	0	8,813	0	2,525	3,592	0	2,873	94	0	5,100	319	0	8,897	1,238	16,574	2,988	24,846	2,967	25,151	112,828
RD.LC	530,031	0	799,766	0	0	2	701,931	3	0	0	0	5,063	0	48,113	5	159,432	2	53,278	0	231,377	2,529,002
RD.EL	1,575,178	0	2,246,522	91	0	8,868	662,390	9,000	3,243	0	20,253	29,053	995	336,856	26,169	1,324,352	33,982	2,896,244	12,623	990,551	10,176,368
RD.MR	180,733	0	525,617	911	3,908	16,249	29,472	16,716	13,901	0	12,780	44,819	0	105,812	28,804	382,437	34,272	1,346,673	8,763	477,365	3,229,229
RD.PR	40,121	360	420,983	9,439	3,115	27,935	12,261	50,305	15,685	771	4,284	44,401	1,741	313,193	21,269	202,102	54,264	1,273,209	12,243	978,853	3,486,534
SP.LC	0	0	0	0	0	0	11,456,030	0	0	0	2	0	0	3	0	0	0	0	3	14,051	11,470,088
SP.EL	0	0	0	0	0	0	795,524	175,760	0	0	46,310	0	0	60,805	0	0	0	0	0	472,730	1,551,128
SP.MR	0	0	0	0	0	0	47,307	1,150,572	0	0	3,270	13,682	0	4,013,712	0	270	3,266	0	0	5,875,491	11,107,569
SP.PR	0	0	270	0	0	0	11,597	332,810	137	0	41,028	1,212	0	5,284,991	450	1,294	45,677	117	0	3,408,390	9,127,973
<b>Total</b>	<b>3,656,417</b>	<b>1,665</b>	<b>5,329,839</b>	<b>25,023</b>	<b>14,662</b>	<b>118,997</b>	<b>14,568,145</b>	<b>2,781,236</b>	<b>140,543</b>	<b>26,846</b>	<b>635,691</b>	<b>187,001</b>	<b>15,848</b>	<b>10,868,627</b>	<b>177,421</b>	<b>4,940,905</b>	<b>1,199,196</b>	<b>6,734,255</b>	<b>237,086</b>	<b>21,337,997</b>	<b>72,997,401</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42]

<sup>a</sup> WH.LC — White still wine, low-cost

WH.EL — White still wine, entry level

WH.MR — White still wine, middle range

WH.PR — White still wine, premium

RS.LC — Rosé still wine, low-cost

RS.EL — Rosé still wine, entry level

RS.MR — Rosé still wine, middle range

RS.PR — Rosé still wine, premium

RD.LC — Red still wine, low-cost

RD.EL — Red still wine, entry level

RD.MR — Red still wine, middle range

RD.PR — Red still wine, premium

SP.LC — Sparkling wine, low-cost

SP.EL — Sparkling wine, entry level

SP.MR — Sparkling wine, middle range

SP.PR — Sparkling wine, premium



Table C.13: *2020 Imports of Italian wine to Russia by region and by SSA category, liters*

SSA category <sup>a</sup>	Abruzzo	Aosta Valley	Apulia	Basilicata	Calabria	Campania	Emilia-Romagna	FVG	Lazio	Liguria	Lombardy	Marche	Molise	Piedmont	Sardinia	Sicily	Trentino-Alto Adige	Tuscany	Umbria	Veneto	Italy total
WH.LC	943,721	0	384,282	0	0	6	973,178	720,909	6,701	0	11,360	13,029	21,600	23,717	0	1,342,237	15	25,323	189,544	3,984,244	8,639,864
WH.EL	212,621	0	557,750	0	0	7,452	151,215	262,631	17,972	0	149,886	8,201	6	18,373	40,770	865,957	223,925	434,014	39,107	4,863,940	7,853,820
WH.MR	62,546	0	66,680	12,494	0	25,598	7,602	116,921	83,985	0	59,428	5,985	0	120,752	16,314	176,818	385,664	169,274	59,187	946,120	2,315,367
WH.PR	33,759	720	20,013	585	853	26,215	5,394	310,241	8,462	11,594	60,617	24,617	324	531,712	46,840	134,221	574,517	291,488	32,468	389,312	2,503,951
RS.LC	0	0	104,018	0	0	0	18,045	0	0	0	33,097	0	0	2	0	38,946	1,800	6	0	495,850	691,763
RS.EL	544	0	169,423	0	0	0	6,468	0	0	0	82,082	0	3	810	2,813	53,021	39,375	683	0	607,997	963,218
RS.MR	12,065	0	25,670	315	0	0	0	3,332	0	0	3	90	0	473	450	18,246	16,197	19,546	1,620	91,054	189,059
RS.PR	6,036	0	3,293	0	243	1,760	0	7,832	0	0	1,916	98	0	1,747	2,204	28,328	13,225	18,155	1,830	32,887	119,553
RD.LC	1,724,483	0	1,235,318	0	0	6	1,268,926	14	0	0	11	0	0	67,636	0	411,689	9	163,376	9	186,758	5,058,232
RD.EL	1,091,840	0	1,732,043	0	0	11,178	405,436	456	12,348	0	6,839	4,503	3	265,127	21,496	1,124,771	45,017	2,964,289	4,725	847,682	8,537,751
RD.MR	134,821	0	674,581	69,333	0	8,057	21,091	31,751	13,178	0	1,935	47,327	0	94,945	19,332	275,204	28,562	1,233,222	4,122	427,641	3,085,099
RD.PR	70,020	0	392,730	33,434	1,568	29,323	26,068	31,832	8,373	0	4,278	35,108	7,646	249,548	21,771	211,784	53,104	1,178,419	6,696	1,115,196	3,476,893
SP.LC	0	0	0	0	0	0	11,264,309	0	0	0	17	0	0	10,376	0	0	0	0	0	13,052	11,287,753
SP.EL	0	0	0	0	0	0	324,423	72,144	0	0	27,066	0	0	763,087	0	0	0	0	0	1,363,087	2,549,807
SP.MR	0	0	0	0	0	0	141,726	808,260	0	0	3,608	7,583	0	7,125,357	0	0	9,209	756	0	7,983,275	16,079,773
SP.PR	0	0	270	0	0	0	10,997	201,816	2	0	36,905	1,172	0	1,025,255	675	2,342	40,748	1,670	0	3,310,956	4,632,805
<b>Total</b>	<b>4,292,455</b>	<b>720</b>	<b>5,366,070</b>	<b>116,161</b>	<b>2,663</b>	<b>109,595</b>	<b>14,624,876</b>	<b>2,568,137</b>	<b>151,020</b>	<b>11,594</b>	<b>479,045</b>	<b>147,711</b>	<b>29,582</b>	<b>10,298,915</b>	<b>172,664</b>	<b>4,683,563</b>	<b>1,431,365</b>	<b>6,500,219</b>	<b>339,308</b>	<b>26,659,048</b>	<b>77,984,708</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42]

<sup>a</sup> WH.LC — White still wine, low-cost

WH.EL — White still wine, entry level

WH.MR — White still wine, middle range

WH.PR — White still wine, premium

RS.LC — Rosé still wine, low-cost

RS.EL — Rosé still wine, entry level

RS.MR — Rosé still wine, middle range

RS.PR — Rosé still wine, premium

RD.LC — Red still wine, low-cost

RD.EL — Red still wine, entry level

RD.MR — Red still wine, middle range

RD.PR — Red still wine, premium

SP.LC — Sparkling wine, low-cost

SP.EL — Sparkling wine, entry level

SP.MR — Sparkling wine, middle range

SP.PR — Sparkling wine, premium

**Table C.14: *Apulia SSA category dynamics, liters***

SSA category	2012	2013	2014	2015	2016	2017	2018	2019	2020
White.low-cost	4,392	0	5,040	115,626	82,044	60,876	95,947	65,057	384,282
White.entry level	27,810	164,322	154,821	169,514	293,747	506,684	848,179	936,143	557,750
White.middle range	8,072	17,744	32,585	44,447	43,542	103,189	62,222	63,800	66,680
White.premium	20,133	14,289	7,877	6,743	14,930	21,752	19,596	27,585	20,013
Rosé.low-cost	5,850	900	0	0	0	0	0	23,681	104,018
Rosé.entry level	83,209	166,561	61,826	74,543	126,332	208,568	215,604	195,701	169,423
Rosé.middle range	2,493	953	855	909	3,600	1,061	7,687	15,901	25,670
Rosé.premium	2,327	450	339	43	688	4,571	3,129	8,813	3,293
Red.low-cost	34,905	25,113	41,042	48,647	227,342	405,534	305,414	799,766	1,235,318
Red.entry level	1,159,312	980,226	996,815	1,104,101	1,146,519	2,319,598	2,204,060	2,246,522	1,732,043
Red.middle range	50,658	61,370	115,640	156,118	177,188	421,875	414,751	525,617	674,581
Red.premium	63,875	64,745	85,148	97,188	119,156	361,252	382,016	420,983	392,730
Sparkling.low-cost	68,423	194,472	45,451	20,866	40,590	45,225	0	0	0
Sparkling.entry level	1,800	6,228	749	25,754	0	945	26,280	0	0
Sparkling.middle range	0	0	0	6	0	0	0	0	0
Sparkling.premium	0	0	0	76	112	0	0	270	270
<b>Total</b>	<b>1,533,257</b>	<b>1,697,372</b>	<b>1,548,185</b>	<b>1,864,581</b>	<b>2,275,788</b>	<b>4,461,130</b>	<b>4,604,000</b>	<b>5,329,839</b>	<b>5,366,070</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42]

**Table C.15: *Emilia-Romagna SSA category dynamics, liters***

SSA category	2012	2013	2014	2015	2016	2017	2018	2019	2020
White.low-cost	47,736	10,470	0	2,700	23,994	145,783	359,179	457,428	973,178
White.entry level	186,489	293,088	283,589	236,264	267,282	459,063	318,988	334,570	151,215
White.middle range	4,050	534	3,848	5,670	2,205	11,127	8,423	14,522	7,602
White.premium	3,510	885	1,075	1,191	1,152	1,823	4,289	3,144	5,394
Rosé.low-cost	0	5	0	0	0	0	0	4	18,045
Rosé.entry level	0	0	0	0	0	16,763	16,200	41,967	6,468
Rosé.middle range	0	0	0	0	0	0	0	0	0
Rosé.premium	0	0	0	0	0	0	225	0	0
Red.low-cost	62,486	43,230	23,382	6,750	27,366	91,223	344,038	701,931	1,268,926
Red.entry level	486,906	566,581	493,520	424,140	374,808	616,445	626,750	662,390	405,436
Red.middle range	18,902	25,425	25,335	16,740	7,281	34,569	19,310	29,472	21,091
Red.premium	14,360	297	2,351	5,427	1,800	4,574	7,413	12,261	26,068
Sparkling.low-cost	8,724,186	12,076,381	13,443,449	9,234,277	9,081,983	11,982,660	11,074,617	11,456,030	11,264,309
Sparkling.entry level	672,394	1,510,805	1,570,327	547,180	409,283	450,754	767,909	795,524	324,423
Sparkling.middle range	43,572	45,072	41,519	37,318	19,062	36,431	28,946	47,307	141,726
Sparkling.premium	9,637	10,973	5,097	3,422	1,267	5,144	9,063	11,597	10,997
<b>Total</b>	<b>10,274,227</b>	<b>14,583,746</b>	<b>15,893,492</b>	<b>10,521,077</b>	<b>10,217,483</b>	<b>13,856,359</b>	<b>13,585,348</b>	<b>14,568,145</b>	<b>14,624,876</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42]

**Table C.16: Piedmont SSA category dynamics, liters**

SSA category	2012	2013	2014	2015	2016	2017	2018	2019	2020
White.low-cost	1,800	14,460	5,688	14,121	1,320	1,335	660	2	23,717
White.entry level	78,147	55,733	78,683	73,063	109,347	30,836	58,143	32,098	18,373
White.middle range	70,034	88,217	220,646	282,092	195,675	264,372	307,449	91,834	120,752
White.premium	338,684	366,680	463,201	387,795	411,857	546,656	673,684	570,960	531,712
Rosé.low-cost	0	2	0	1,800	1,800	0	0	0	2
Rosé.entry level	0	5	72	2	675	3,911	3,510	1,354	810
Rosé.middle range	367	275	1,681	1,625	2,678	1,220	0	0	473
Rosé.premium	7,196	27,034	12,200	398	225	2,390	3,773	8,897	1,747
Red.low-cost	21,728	70,740	28,354	19,170	28,590	101,380	3,473	48,113	67,636
Red.entry level	248,680	268,526	287,918	232,931	288,098	472,840	304,784	336,856	265,127
Red.middle range	43,693	60,582	131,668	242,351	146,660	157,012	91,001	105,812	94,945
Red.premium	224,042	258,153	306,999	257,339	224,559	371,383	335,208	313,193	249,548
Sparkling.low-cost	15,474	55,053	119,678	4,500	9,401	6	8	3	10,376
Sparkling.entry level	570,352	265,829	426,796	40,991	230,441	39,443	106,949	60,805	763,087
Sparkling.middle range	2,572,191	3,871,696	5,177,974	5,229,998	4,674,305	5,167,700	6,904,862	4,013,712	7,125,357
Sparkling.premium	4,304,159	7,053,968	5,859,507	1,270,522	1,319,366	2,807,584	1,750,231	5,284,991	1,025,255
<b>Total</b>	<b>8,496,545</b>	<b>12,456,949</b>	<b>13,121,061</b>	<b>8,058,696</b>	<b>7,644,997</b>	<b>9,968,066</b>	<b>10,543,733</b>	<b>10,868,627</b>	<b>10,298,915</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42]

**Table C.17: Tuscany SSA category dynamics, liters**

SSA category	2012	2013	2014	2015	2016	2017	2018	2019	2020
White.low-cost	52,920	28,871	29,340	31,500	25,344	20,529	23,318	45,402	25,323
White.entry level	144,178	160,687	172,395	211,523	173,744	294,178	213,007	313,928	434,014
White.middle range	88,817	82,439	75,960	121,238	63,579	136,628	97,970	354,928	169,274
White.premium	377,592	361,342	478,155	204,102	240,618	337,419	360,174	373,915	291,488
Rosé.low-cost	0	3,938	0	0	0	0	0	3	6
Rosé.entry level	7,020	10,966	8,730	3,245	2,668	2,580	207	8	683
Rosé.middle range	17,622	31,346	38,090	19,485	20,081	20,387	14,759	51,706	19,546
Rosé.premium	15,029	37,944	22,426	9,270	13,037	15,593	22,794	24,846	18,155
Red.low-cost	224,063	91,643	34,350	29,124	43,200	28,211	25,350	53,278	163,376
Red.entry level	2,723,302	2,798,356	2,876,856	1,920,657	2,027,773	2,965,284	2,593,797	2,896,244	2,964,289
Red.middle range	830,038	1,204,582	1,367,765	940,160	917,311	1,386,052	1,299,965	1,346,673	1,233,222
Red.premium	1,323,987	1,346,779	1,386,207	947,588	1,056,149	1,355,776	1,269,066	1,273,209	1,178,419
Sparkling.low-cost	0	0	0	0	0	0	0	0	0
Sparkling.entry level	0	0	0	0	0	0	0	0	0
Sparkling.middle range	0	0	0	0	0	0	0	0	756
Sparkling.premium	0	0	38	1,892	0	0	363	117	1,670
<b>Total</b>	<b>5,804,566</b>	<b>6,158,890</b>	<b>6,490,311</b>	<b>4,439,783</b>	<b>4,583,503</b>	<b>6,562,635</b>	<b>5,920,768</b>	<b>6,734,255</b>	<b>6,500,219</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42]

**Table C.18: Veneto SSA category dynamics, liters**

SSA category	2012	2013	2014	2015	2016	2017	2018	2019	2020
White.low-cost	414,402	540,593	327,506	188,366	252,499	502,033	682,257	980,505	3,984,244
White.entry level	2,450,939	3,183,168	3,347,598	2,929,162	3,557,259	5,138,742	4,612,970	5,973,289	4,863,940
White.middle range	513,396	624,288	899,161	555,925	567,170	853,428	944,968	967,427	946,120
White.premium	164,021	174,348	194,350	147,155	179,551	263,880	344,768	348,186	389,312
Rosé.low-cost	161,272	59,285	720	495	990	657	0	9,951	495,850
Rosé.entry level	95,330	127,802	138,888	158,843	104,133	180,067	244,523	481,326	607,997
Rosé.middle range	38,086	65,237	87,102	53,842	92,042	101,382	90,520	103,354	91,054
Rosé.premium	8,115	32,825	20,808	16,303	11,601	25,205	25,401	25,151	32,887
Red.low-cost	624,526	589,313	351,223	217,266	104,444	306,887	168,825	231,377	186,758
Red.entry level	1,514,637	1,196,237	1,137,241	928,155	854,177	1,138,134	941,739	990,551	847,682
Red.middle range	353,516	487,329	580,914	369,957	368,983	497,619	419,302	477,365	427,641
Red.premium	430,439	515,917	513,608	451,887	565,006	894,096	874,243	978,853	1,115,196
Sparkling.low-cost	4,950	12,240	7,700	64,871	32,239	28,457	14,808	14,051	13,052
Sparkling.entry level	100,400	118,404	514,090	459,987	248,381	168,431	143,499	472,730	1,363,087
Sparkling.middle range	1,168,255	1,852,264	1,808,878	1,768,997	3,037,449	3,647,121	4,358,659	5,875,491	7,983,275
Sparkling.premium	733,262	929,102	681,464	569,664	971,359	2,140,306	2,972,665	3,408,390	3,310,956
<b>Total</b>	<b>8,775,543</b>	<b>10,508,350</b>	<b>10,611,249</b>	<b>8,880,874</b>	<b>10,947,282</b>	<b>15,886,444</b>	<b>16,839,147</b>	<b>21,337,997</b>	<b>26,659,048</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42]

**Table C.19: Italy SSA category dynamics, liters**

SSA category	2012	2013	2014	2015	2016	2017	2018	2019	2020
White.low-cost	627,264	677,805	455,290	489,755	709,458	1,350,731	2,048,778	3,111,794	8,639,864
White.entry level	4,094,507	5,205,239	5,605,441	5,238,386	6,040,709	8,723,187	8,168,770	10,585,807	7,853,820
White.middle range	1,142,831	1,354,992	1,928,397	1,675,138	1,441,329	2,040,501	2,245,200	2,639,963	2,315,367
White.premium	1,737,167	1,900,181	2,161,642	1,401,210	1,649,406	2,158,947	2,553,760	2,670,013	2,503,951
Rosé.low-cost	168,832	66,831	945	4,547	8,865	2,547	66,357	115,142	691,763
Rosé.entry level	206,297	416,891	290,070	307,613	312,555	462,462	572,100	867,455	963,218
Rosé.middle range	98,715	134,164	164,261	107,517	147,273	147,429	142,177	216,508	189,059
Rosé.premium	54,692	147,353	80,503	44,363	48,051	73,343	95,724	112,828	119,553
Red.low-cost	1,273,895	1,047,410	708,856	591,562	734,601	1,699,842	1,527,020	2,529,002	5,058,232
Red.entry level	7,853,008	7,757,398	7,762,976	6,723,122	6,910,955	11,238,819	10,135,226	10,176,368	8,537,751
Red.middle range	1,708,684	2,287,288	2,758,573	2,122,579	2,038,397	3,218,282	2,836,289	3,229,229	3,085,099
Red.premium	2,450,154	2,669,814	2,803,479	2,032,087	2,306,658	3,432,177	3,317,578	3,486,534	3,476,893
Sparkling.low-cost	8,813,033	12,399,571	13,651,431	9,367,982	9,168,335	12,060,614	11,094,160	11,470,088	11,287,753
Sparkling.entry level	1,345,629	1,959,160	2,652,857	1,084,685	902,607	677,370	1,067,719	1,551,128	2,549,807
Sparkling.middle range	3,790,340	5,834,642	7,124,523	7,758,410	8,039,822	9,305,422	12,202,107	11,107,569	16,079,773
Sparkling.premium	5,143,438	8,942,306	7,774,870	2,529,144	2,432,059	5,237,281	4,975,017	9,127,973	4,632,805
<b>Total</b>	<b>40,508,485</b>	<b>52,801,043</b>	<b>55,924,114</b>	<b>41,478,098</b>	<b>42,891,079</b>	<b>61,828,954</b>	<b>63,047,982</b>	<b>72,997,401</b>	<b>77,984,708</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42]

Table C.20: *Apulia SSA data by pairs of years and by category, liters*

SSA category	2013 – 2012				2014 – 2013				2015 – 2014			
	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	-4,392	1,333	-979	-4,746	5,040	0	0	5,040 <sup>‡</sup>	110,586	-1,302	1,683	110,204
White.entry level	136,512	8,439	-895	128,968	-9,501	9,719	2,915	-22,135	14,693	-39,993	29,855	24,831
White.middle range	9,671	2,450	-951	8,173	14,841	1,049	6,459	7,332	11,862	-8,417	4,138	16,141
White.premium	-5,844	6,109	-4,220	-7,733	-6,412	845	1,121	-8,378	-1,134	-2,035	-736	1,637
Rosé.low-cost	-4,950	1,775	-5,310	-1,416	-900	53	-941	-13	0	0	0	0 <sup>‡</sup>
Rosé.entry level	83,352	25,250	59,692	-1,590	-104,735	9,852	-60,520	-54,067	12,718	-15,970	19,709	8,979
Rosé.middle range	-1,541	757	139	-2,436	-98	56	157	-311	54	-221	-75	349
Rosé.premium	-1,877	706	3,236	-5,818	-111	27	-231	93	-296	-88	-65	-144
Red.low-cost	-9,792	10,592	-16,798	-3,586	15,929	1,485	-9,603	24,046	7,606	-10,602	3,811	14,397
Red.entry level	-179,086	351,801	-365,915	-164,972	16,589	57,978	-57,273	15,884	107,287	-257,492	123,968	240,810
Red.middle range	10,712	15,372	1,782	-6,442	54,270	3,630	9,015	41,625	40,479	-29,871	3,210	67,140
Red.premium	870	19,383	-13,657	-4,856	20,403	3,830	-588	17,162	12,040	-21,995	-1,434	35,469
Sparkling.low-cost	126,050	20,763	7,082	98,204	-149,021	11,503	8,131	-168,655	-24,585	-11,741	-2,521	-10,324
Sparkling.entry level	4,428	546	274	3,607	-5,479	368	1,837	-7,684	25,006	-193	-249	25,448
Sparkling.middle range	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	6	0	0	6 <sup>‡</sup>
Sparkling.premium	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	76	0	0	76 <sup>‡</sup>
<b>Total</b>	<b>164,114</b>	<b>465,277</b>	<b>-336,520</b>	<b>35,358</b>	<b>-149,186</b>	<b>100,396</b>	<b>-99,521</b>	<b>-150,061</b>	<b>316,396</b>	<b>-399,919</b>	<b>181,295</b>	<b>535,020</b>

SSA category	2016 – 2015				2017 – 2016				2018 – 2017			
	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	-33,582	3,939	47,931	-85,451	-21,168	36,225	37,934	-95,327	35,071	1,200	30,260	3,611
White.entry level	124,233	5,775	20,189	98,270	212,937	129,699	744	82,494	341,495	9,990	-42,193	373,698
White.middle range	-905	1,514	-7,718	5,299	59,647	19,225	-1,125	41,546	-40,967	2,034	8,317	-51,318
White.premium	8,187	230	965	6,993	6,822	6,592	-1,980	2,210	-2,156	429	3,549	-6,134
Rosé.low-cost	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	19,116	0	0	19,116 <sup>‡</sup>
Rosé.entry level	51,788	2,539	-1,342	50,591	82,236	55,780	4,811	21,645	7,037	4,112	45,334	-42,409
Rosé.middle range	2,691	31	305	2,355	-2,539	1,590	-1,586	-2,543	6,626	21	-59	6,663
Rosé.premium	645	1	2	641	3,884	304	58	3,522	-1,442	90	1,305	-2,837
Red.low-cost	178,694	1,657	10,106	166,931	178,193	100,379	198,340	-120,527	-100,120	7,996	-49,226	-58,889
Red.entry level	42,418	37,612	-6,765	11,571	1,173,079	506,227	211,760	455,091	-115,538	45,734	-273,506	112,235
Red.middle range	21,070	5,318	-11,510	27,261	244,687	78,235	24,327	142,126	-7,125	8,318	-58,392	42,950
Red.premium	21,968	3,311	9,821	8,836	242,097	52,611	5,530	183,955	20,764	7,122	-19,185	32,826
Sparkling.low-cost	19,724	711	-1,155	20,169	4,635	17,922	-5,117	-8,170	-45,225	892	-4,516	-41,601
Sparkling.entry level	-25,754	877	-5,201	-21,431	945	0	0	945 <sup>‡</sup>	25,335	19	526	24,790
Sparkling.middle range	-6	0	0	-6	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Sparkling.premium	36	3	-5	39	-112	49	80	-241	0	0	0	0 <sup>‡</sup>
<b>Total</b>	<b>411,207</b>	<b>63,518</b>	<b>55,622</b>	<b>292,067</b>	<b>2,185,342</b>	<b>1,004,838</b>	<b>473,777</b>	<b>706,727</b>	<b>142,870</b>	<b>87,956</b>	<b>-357,785</b>	<b>412,699</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42].

<sup>‡</sup> Indirectly calculated values.

(Continued on next page)

Table C.20 continued.

SSA category	2019 – 2018				2020 – 2019			
	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	-30,890	15,141	34,641	-80,672	319,225	4,445	111,129	203,651
White.entry level	87,965	133,849	117,117	-163,001	-378,393	63,959	-305,559	-136,793
White.middle range	1,577	9,819	1,121	-9,363	2,880	4,359	-12,203	10,724
White.premium	7,989	3,092	-2,200	7,097	-7,572	1,885	-3,600	-5,856
Rosé.low-cost	4,565	3,017	11,037	-9,489	80,336	1,618	116,975	-38,257
Rosé.entry level	-19,903	34,024	77,285	-131,212	-26,279	13,371	8,234	-47,883
Rosé.middle range	8,214	1,213	2,806	4,195	9,770	1,086	-3,102	11,785
Rosé.premium	5,684	494	65	5,125	-5,520	602	-77	-6,045
Red.low-cost	494,352	48,197	152,206	293,949	435,551	54,641	745,197	-364,287
Red.entry level	42,462	347,816	-338,869	33,515	-514,479	153,486	-515,225	-152,740
Red.middle range	110,866	65,451	-7,991	53,406	148,964	35,911	-59,371	172,424
Red.premium	38,967	60,285	-40,830	19,512	-28,253	28,762	-29,926	-27,089
Sparkling.low-cost	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Sparkling.entry level	-26,280	4,147	7,751	-38,178	0	0	0	0 <sup>‡</sup>
Sparkling.middle range	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Sparkling.premium	270	0	0	270 <sup>‡</sup>	0	18	-151	133
<b>Total</b>	<b>725,839</b>	<b>726,544</b>	<b>14,140</b>	<b>-14,845</b>	<b>36,231</b>	<b>364,144</b>	<b>52,319</b>	<b>-380,232</b>

SSA category	2016 – 2012				2020 – 2016				2020 – 2012			
	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	77,652	258	317	77,076	302,238	67,129	849,969	-614,860	379,890	4,063	52,040	323,787
White.entry level	265,937	1,636	11,583	252,719	264,003	240,345	-152,177	175,835	529,940	25,728	-195	504,407
White.middle range	35,470	475	1,634	33,361	23,138	35,626	-9,222	-3,267	58,607	7,468	814	50,325
White.premium	-5,203	1,184	-2,201	-4,186	5,083	12,216	-4,481	-2,652	-120	18,626	-9,739	-9,007
Rosé.low-cost	-5,850	344	-5,887	-307	104,018	0	0	104,018 <sup>‡</sup>	98,168	5,412	12,707	80,048
Rosé.entry level	43,123	4,894	37,965	264	43,091	103,365	159,626	-219,900	86,214	76,980	228,320	-219,087
Rosé.middle range	1,107	147	1,080	-119	22,070	2,946	-1,924	21,049	23,177	2,306	-25	20,896
Rosé.premium	-1,639	137	-419	-1,356	2,606	563	461	1,582	967	2,152	607	-1,792
Red.low-cost	192,437	2,053	-16,830	207,213	1,007,976	186,012	1,152,050	-330,085	1,200,413	32,292	71,399	1,096,721
Red.entry level	-12,793	68,187	-207,259	126,279	585,524	938,086	-668,202	315,641	572,731	1,072,532	-971,446	47,1645
Red.middle range	126,530	2,980	6,796	116,755	497,393	144,976	-53,991	406,408	623,923	46,866	-6,059	583,116
Red.premium	55,281	3,757	-7,498	59,022	273,575	97,493	-37,042	213,123	328,856	59,093	-32,326	302,089
Sparkling.low-cost	-27,833	4,024	-1,266	-30,591	-40,590	33,211	-23,828	-49,973	-68,423	63,301	-44,088	-87,636
Sparkling.entry level	-1,800	106	-698	-1,207	0	0	0	0 <sup>‡</sup>	-1,800	1,665	-54	-3,411
Sparkling.middle range	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Sparkling.premium	112	0	0	112 <sup>‡</sup>	158	91	10	57	270	0	0	270 <sup>‡</sup>
<b>Total</b>	<b>742,531</b>	<b>90,182</b>	<b>-182,685</b>	<b>835,034</b>	<b>3,090,282</b>	<b>1,862,058</b>	<b>1,211,248</b>	<b>16,976</b>	<b>3,832,813</b>	<b>1,418,485</b>	<b>-698,044</b>	<b>3,112,372</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42].

<sup>‡</sup> Indirectly calculated values.

Table C.21: Emilia-Romagna SSA data by pairs of years and by category, liters

SSA category	2013 – 2012				2014 – 2013				2015 – 2014			
	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	-37,266	14,486	-10,640	-41,112	-10,470	619	-4,056	-7,033	2,700	0	0	2,700 <sup>‡</sup>
White.entry level	106,599	56,591	-6,002	56,009	-9,500	17,336	5,198	-32,033	-47,325	-73,255	54,685	-28,755
White.middle range	-3,516	1,229	-477	-4,268	3,314	32	194	3,088	1,823	-994	489	2,328
White.premium	-2,625	1,065	-736	-2,954	190	52	69	68	116	-278	-101	494
Rosé.low-cost	5	0	0	5 <sup>‡</sup>	-5	0	-5	-0	0	0	0	0 <sup>‡</sup>
Rosé.entry level	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Rosé.middle range	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Rosé.premium	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Red.low-cost	-19,256	18,962	-30,071	-8,147	-19,848	2,557	-16,530	-5,875	-16,632	-6,040	2,171	-12,763
Red.entry level	79,675	147,755	-153,683	85,603	-73,061	33,512	-33,105	-73,468	-69,380	-127,483	61,376	-3,273
Red.middle range	6,524	5,736	665	123	-90	1,504	3,735	-5,329	-8,595	-6,544	703	-2,754
Red.premium	-14,063	4,357	-3,070	-15,350	2,054	18	-3	2,039	3,076	-607	-40	3,723
Sparkling.low-cost	3,352,195	2,647,410	902,971	-198,187	1,367,069	714,293	504,939	147,837	-4,209,173	-3,472,640	-745,551	9,018
Sparkling.entry level	838,411	204,042	102,531	531,838	59,522	89,361	445,583	-475,422	-1,023,148	-405,638	-522,622	-94,887
Sparkling.middle range	1,500	13,222	10,278	-22,000	-3,553	2,666	7,298	-13,517	-4,202	-10,725	14,419	-7,896
Sparkling.premium	1,337	2,924	4,193	-5,781	-5,876	649	-2,082	-4,444	-1,676	-1,317	-2,122	1,763
<b>Total</b>	<b>4,309,518</b>	<b>3,117,780</b>	<b>815,960</b>	<b>375,778</b>	<b>1,309,747</b>	<b>862,598</b>	<b>911,237</b>	<b>-464,088</b>	<b>-5,372,415</b>	<b>-4,105,521</b>	<b>-1,136,593</b>	<b>-130,301</b>

SSA category	2016 – 2015				2017 – 2016				2018 – 2017			
	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	21,294	92	1,119	20,083	121,789	10,594	11,094	100,101	213,396	2,874	72,465	138,057
White.entry level	31,019	8,048	28,138	-5,168	191,781	118,014	677	73,090	-140,076	9,051	-38,227	-110,899
White.middle range	-3,465	193	-985	-2,674	8,922	974	-57	8,005	-2,705	219	897	-3,821
White.premium	-39	41	170	-250	671	509	-153	315	2,466	36	297	2,132
Rosé.low-cost	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Rosé.entry level	0	0	0	0 <sup>‡</sup>	16,763	0	0	16,763 <sup>‡</sup>	-563	330	3,643	-4,536
Rosé.middle range	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Rosé.premium	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	225	0	0	225 <sup>‡</sup>
Red.low-cost	20,616	230	1,402	18,984	63,857	12,083	23,875	27,899	252,815	1,799	-11,073	262,089
Red.entry level	-49,332	14,449	-2,599	-61,182	241,637	165,491	69,226	6,920	10,305	12,154	-72,686	70,837
Red.middle range	-9,459	570	-1,234	-8,795	27,288	3,215	1,000	23,074	-15,260	682	-4,785	-11,157
Red.premium	-3,627	185	548	-4,360	2,774	795	84	1,895	2,840	90	-243	2,992
Sparkling.low-cost	-152,294	314,572	-511,370	44,504	2,900,677	4,010,006	-1,144,967	35,638	-908,043	236,252	-1,196,458	52,163
Sparkling.entry level	-137,896	18,640	-110,491	-46,046	41,470	180,713	-282,845	143,603	317,155	8,887	250,869	57,399
Sparkling.middle range	-18,256	1,271	82	-19,609	17,369	8,417	-5,416	14,369	-7,486	718	10,622	-18,826
Sparkling.premium	-2,155	117	-248	-2,023	3,877	559	902	2,416	3,920	101	-359	4,177
<b>Total</b>	<b>-303,594</b>	<b>358,408</b>	<b>-595,465</b>	<b>-66,536</b>	<b>3,638,875</b>	<b>4,511,368</b>	<b>-1,326,581</b>	<b>454,089</b>	<b>-271,011</b>	<b>273,194</b>	<b>-985,037</b>	<b>440,832</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42].

<sup>‡</sup> Indirectly calculated values.

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Table C.21 continued.

SSA category	2019 – 2018				2020 – 2019			
	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	98,249	56,681	129,680	-88,112	515,750	31,252	781,364	-296,867
White.entry level	15,582	50,339	44,046	-78,802	-183,355	22,858	-109,204	-97,009
White.middle range	6,099	1,329	152	4,618	-6,920	992	-2,778	-5,134
White.premium	-1,145	677	-482	-1,340	2,250	215	-410	2,446
Rosé.low-cost	4	0	0	4	18,041	0	19	18,022
Rosé.entry level	25,767	2,556	5,807	17,403	-35,499	2,867	1,766	-40,132
Rosé.middle range	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Rosé.premium	-225	36	5	-265	0	0	0	0 <sup>‡</sup>
Red.low-cost	357,893	54,292	171,455	132,147	566,995	47,957	654,037	-135,000
Red.entry level	35,639	98,906	-96,361	33,095	-256,954	45,256	-151,915	-150,295
Red.middle range	10,163	3,047	-372	7,487	-8,381	2,014	-3,329	-7,066
Red.premium	4,848	1,170	-792	4,470	13,807	838	-872	13,841
Sparkling.low-cost	381,414	1,747,653	-1,372,387	6,148	-191,721	782,696	-964,808	-9,609
Sparkling.entry level	27,614	121,182	226,489	-320,056	-471,101	54,352	457,839	-983,291
Sparkling.middle range	18,362	4,568	-7,164	20,958	94,419	3,232	17,944	73,242
Sparkling.premium	2,534	1,430	6,135	-5,032	-600	792	-6,503	5,111
<b>Total</b>	<b>982,797</b>	<b>2,143,864</b>	<b>-893,790</b>	<b>-267,277</b>	<b>56,731</b>	<b>995,321</b>	<b>673,150</b>	<b>-1,611,739</b>

SSA category	2016 – 2012				2020 – 2016				2020 – 2012			
	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	-23,742	2,808	3,447	-29,997	949,184	19,632	248,576	680,976	925,442	44,163	565,611	315,667
White.entry level	80,793	10,969	77,673	-7,849	-116,067	218,691	-138,467	-196,291	-35,274	172,529	-1,307	-206,496
White.middle range	-1,845	238	820	-2,903	5,397	1,804	-467	4,060	3,552	3,747	408	-603
White.premium	-2,358	206	-384	-2,181	4,242	943	-346	3,645	1,884	3,247	-1,698	335
Rosé.low-cost	0	0	0	0 <sup>‡</sup>	18,045	0	0	18,045 <sup>‡</sup>	18,045	0	0	18,045 <sup>‡</sup>
Rosé.entry level	0	0	0	0 <sup>‡</sup>	6,468	0	0	6,468 <sup>‡</sup>	6,468	0	0	6,468 <sup>‡</sup>
Rosé.middle range	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Rosé.premium	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Red.low-cost	-35,120	3,675	-30,128	-8,667	1,241,560	22,391	138,677	1,080,492	1,206,440	57,809	127,818	1,020,813
Red.entry level	-112,098	28,638	-87,048	-53,688	30,628	306,669	-218,442	-57,600	-81,470	450,459	-408,003	-123,926
Red.middle range	-11,621	1,112	2,536	-15,268	13,810	5,957	-2,219	10,071	2,189	17,487	-2,261	-13,037
Red.premium	-12,560	845	-1,686	-11,719	24,268	1,473	-560	23,355	11,708	13,285	-7,267	5,691
Sparkling.low-cost	357,797	513,132	-161,412	6,077	2,182,326	7,430,910	-5,331,454	82,869	2,540,123	8,071,137	-5,621,366	90,351
Sparkling.entry level	-263,111	39,548	-260,921	-41,738	-84,860	334,877	412,038	-831,776	-347,971	622,062	-20,350	-949,683
Sparkling.middle range	-24,510	2,563	46,287	-73,360	122,664	15,597	3,466	103,602	98,154	40,310	100,963	-43,120
Sparkling.premium	-8,370	567	-5,647	-3,290	9,730	1,036	110	8,583	1,360	8,915	-9,872	2,316
<b>Total</b>	<b>-56,744</b>	<b>604,301</b>	<b>-416,462</b>	<b>-244,582</b>	<b>4,407,393</b>	<b>8,359,980</b>	<b>-4,889,086</b>	<b>936,498</b>	<b>4,350,649</b>	<b>9,505,150</b>	<b>-5,277,323</b>	<b>122,821</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42].

<sup>‡</sup> Indirectly calculated values.



Table C.22: *Piedmont* SSA data by pairs of years and by category, liters

SSA category	2013 – 2012				2014 – 2013				2015 – 2014			
	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	12,660	546	-401	12,515	-8,772	855	-5,602	-4,025	8,433	-1,469	1,900	8,002
White.entry level	-22,415	23,714	-2,515	-43,614	22,950	3,296	989	18,665	-5,620	-20,325	15,173	-467
White.middle range	18,183	21,252	-8,251	5,182	132,429	5,218	32,114	95,098	61,447	-56,996	28,018	90,424
White.premium	27,996	102,776	-70,994	-3,786	96,521	21,688	28,766	46,067	-75,406	-119,652	-43,295	87,541
Rose.low-cost	0	0	0	0 <sup>‡</sup>	-2	0	-2	-0	1,800	0	0	1,800 <sup>‡</sup>
Rose.entry level	5	0	0	5 <sup>‡</sup>	68	0	-2	69	-71	-19	23	-75
Rose.middle range	-92	111	20	-224	1,406	16	45	1,345	-56	-434	-146	524
Rose.premium	19,838	2,184	10,007	7,647	-14,834	1,599	-13,864	-2,570	-11,802	-3,151	-2,325	-6,325
Red.low-cost	49,013	6,593	-10,456	52,875	-42,386	4,184	-27,049	-19,521	-9,184	-7,324	2,633	-4,492
Red.entry level	19,846	75,463	-78,491	22,873	19,392	15,883	-15,690	19,199	-54,986	-74,373	35,807	-16,420
Red.middle range	16,889	13,259	1,537	2,094	71,086	3,583	8,899	58,603	110,684	-34,012	3,655	141,040
Red.premium	34,110	67,987	-47,901	14,024	48,847	15,269	-2,345	35,922	-49,660	-79,302	-5,170	34,813
Sparkling.low-cost	39,579	4,696	1,602	33,282	64,625	3,256	2,302	59,066	-115,178	-30,914	-6,637	-77,626
Sparkling.entry level	-304,523	173,077	86,971	-564,571	160,967	15,723	78,401	66,843	-385,805	-110,248	-142,042	-133,515
Sparkling.middle range	1,299,505	780,548	606,751	-87,795	1,306,278	229,003	626,925	450,351	52,024	-1,337,546	1,798,244	-408,674
Sparkling.premium	2,749,809	1,306,125	1,872,864	-429,180	-1,194,462	417,227	-1,338,137	-273,552	-4,588,985	-1,513,596	-2,439,829	-635,560
<b>Total</b>	<b>3,960,405</b>	<b>2,578,331</b>	<b>2,360,743</b>	<b>-978,669</b>	<b>664,112</b>	<b>736,802</b>	<b>-624,250</b>	<b>551,559</b>	<b>-5,062,364</b>	<b>-3,389,362</b>	<b>-753,993</b>	<b>-919,009</b>

SSA category	2016 – 2015				2017 – 2016				2018 – 2017			
	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	-12,801	481	5,854	-19,136	15	583	610	-1,178	-675	26	664	-1,365
White.entry level	36,285	2,489	8,702	25,094	-78,511	48,281	277	-127,068	27,307	608	-2,568	29,267
White.middle range	-86,417	9,610	-48,983	-47,044	68,697	86,397	-5,054	-12,647	43,077	5,212	21,309	16,556
White.premium	24,062	13,211	55,480	-44,628	134,798	181,849	-54,617	7,566	127,028	10,778	89,191	27,060
Rose.low-cost	0	61	1,648	-1,710	-1,800	795	-2,078	-517	0	0	0	0 <sup>‡</sup>
Rose.entry level	674	0	-0	673	3,236	298	26	2,912	-401	77	850	-1,328
Rose.middle range	1,053	55	545	452	-1,458	1,182	-1,179	-1,461	-1,220	24	-67	-1,176
Rose.premium	-173	14	20	-206	2,165	99	19	2,046	1,383	47	682	654
Red.low-cost	9,420	653	3,982	4,785	72,790	12,623	24,943	35,224	-97,908	1,999	-12,306	-87,600
Red.entry level	55,167	7,935	-1,427	48,659	184,742	127,205	53,211	4,325	-168,056	9,323	-55,753	-121,625
Red.middle range	-95,691	8,256	-17,868	-86,079	10,352	64,756	20,136	-74,539	-66,012	3,096	-21,732	-47,375
Red.premium	-32,780	8,766	26,005	-67,552	146,824	99,150	10,422	37,252	-36,175	7,322	-19,723	-23,775
Sparkling.low-cost	4,901	153	-249	4,996	-9,395	4,151	-1,185	-12,360	2	0	-1	3
Sparkling.entry level	189,450	1,396	-8,277	196,331	-190,998	101,747	-159,252	-133,494	67,506	778	21,952	44,776
Sparkling.middle range	-555,692	178,164	11,538	-745,394	493,395	2,063,865	-1,328,053	-242,417	1,737,162	101,887	1,506,766	128,509
Sparkling.premium	48,844	43,281	-92,053	97,616	1,488,218	582,545	939,259	-33,586	-1,057,354	55,355	-195,949	-916,760
<b>Total</b>	<b>-413,700</b>	<b>274,525</b>	<b>-55,083</b>	<b>-633,142</b>	<b>2,323,069</b>	<b>3,375,527</b>	<b>-502,514</b>	<b>-549,943</b>	<b>575,667</b>	<b>196,532</b>	<b>1,333,315</b>	<b>-954,180</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42].

<sup>‡</sup> Indirectly calculated values.

(Continued on next page)

Table C.22 continued.

SSA category	2019 – 2018				2020 – 2019			
	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	-659	104	238	-1,001	23,716	0	3	23,713
White.entry level	-26,045	9,175	8,028	-43,249	-13,725	2,193	-10,477	-5,441
White.middle range	-215,615	48,518	5,540	-269,673	28,918	6,274	-17,566	40,209
White.premium	-102,724	106,312	-75,645	-133,391	-39,248	39,009	-74,520	-3,737
Rose.low-cost	0	0	0	0 <sup>‡</sup>	2	0	0	2 <sup>‡</sup>
Rose.entry level	-2,156	554	1,258	-3,968	-544	92	57	-693
Rose.middle range	0	0	0	0 <sup>‡</sup>	473	0	0	473 <sup>‡</sup>
Rose.premium	5,124	595	79	4,450	-7,150	608	-78	-7,680
Red.low-cost	44,640	548	1,731	42,361	19,523	3,287	44,830	-28,594
Red.entry level	32,072	48,097	-46,860	30,834	-71,729	23,015	-77,256	-17,487
Red.middle range	14,811	14,361	-1,753	2,204	-10,867	7,229	-11,952	-6,144
Red.premium	-22,015	52,898	-35,827	-39,086	-63,645	21,398	-22,264	-62,779
Sparkling.low-cost	-5	1	-1	-6	10,373	0	-0	10,373
Sparkling.entry level	-46,144	16,877	31,544	-94,565	702,282	4,154	34,994	663,133
Sparkling.middle range	-2,891,150	1,089,636	-1,709,007	-2,271,779	3,111,645	274,224	1,522,479	1,314,943
Sparkling.premium	3,534,761	276,199	1,184,828	2,073,734	-4,259,737	361,080	-2,963,730	-1,657,086
<b>Total</b>	<b>324,894</b>	<b>1,663,876</b>	<b>-635,848</b>	<b>-703,134</b>	<b>-569,712</b>	<b>742,563</b>	<b>-1,575,480</b>	<b>263,204</b>

SSA category	2016 – 2012				2020 – 2016				2020 – 2012			
	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	-480	106	130	-716	22,397	1,080	13,675	7,642	21,917	1,665	21,328	-1,076
White.entry level	31,200	4,596	32,548	-5,945	-90,975	89,468	-56,648	-123,795	-59,774	72,297	-548	-131,524
White.middle range	125,642	4,119	14,173	107,349	-74,924	160,102	-41,443	-193,583	50,718	64,791	7,063	-21,136
White.premium	73,174	19,920	-37,030	90,284	119,855	336,983	-123,603	-93,526	193,028	313,331	-163,837	43,534
Rose.low-cost	1,800	0	0	1,800 <sup>‡</sup>	-1,798	1,473	137,187	-140,457	2	0	0	2 <sup>‡</sup>
Rose.entry level	675	0	0	675 <sup>‡</sup>	135	552	853	-1,270	810	0	0	810 <sup>‡</sup>
Rose.middle range	2,311	22	159	2,130	-2,205	2,191	-1,431	-2,965	106	339	-4	-230
Rose.premium	-6,971	423	-1,297	-6,097	1,522	184	151	1,187	-5,449	6,657	1,876	-13,982
Red.low-cost	6,863	1,278	-10,476	16,061	39,046	23,392	144,879	-129,226	45,908	20,101	44,444	-18,637
Red.entry level	39,418	14,627	-44,458	69,250	-22,971	235,723	-167,906	-90,787	16,448	230,065	-208,381	-5,236
Red.middle range	102,968	2,570	5,861	94,536	-51,716	119,998	-44,689	-127,025	51,252	40,422	-5,226	16,056
Red.premium	517	13,178	-26,299	13,638	24,989	183,735	-69,810	-88,937	25,506	207,272	-113,386	-68,380
Sparkling.low-cost	-6,074	910	-286	-6,697	975	7,692	-5,518	-1,198	-5,099	14,316	-9,971	-9,444
Sparkling.entry level	-339,911	33,546	-221,324	-152,134	532,646	188,547	231,992	112,107	192,735	527,658	-17,262	-317,662
Sparkling.middle range	2,102,114	151,289	2,732,485	-781,659	2,451,052	3,824,533	849,848	-2,223,328	4,553,166	2,379,650	5,960,176	-3,786,659
Sparkling.premium	-2,984,793	253,158	-2,522,110	-715,842	-294,112	1,079,510	114,372	-1,487,994	-3,278,905	3,981,972	-4,409,282	-2,851,594
<b>Total</b>	<b>-851,548</b>	<b>499,743</b>	<b>-77,924</b>	<b>-1,273,367</b>	<b>2,653,918</b>	<b>6,255,163</b>	<b>981,908</b>	<b>-4,583,153</b>	<b>1,802,370</b>	<b>7,860,536</b>	<b>1,106,991</b>	<b>-7,165,157</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42].

<sup>‡</sup> Indirectly calculated values.

Table C.23: *Tuscany SSA data by pairs of years and by category, liters*

SSA category	2013 – 2012				2014 – 2013				2015 – 2014			
	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	-24,050	16,059	-11,795	-28,313	470	1,708	-11,185	9,947	2,160	-7,579	9,800	-61
White.entry level	16,509	43,752	-4,640	-22,603	11,708	9,504	2,850	-646	39,128	-44,532	33,243	50,416
White.middle range	-6,378	26,952	-10,464	-22,866	-6,479	4,876	30,010	-41,365	45,278	-19,622	9,646	55,254
White.premium	-16,250	114,583	-79,150	-51,683	116,813	21,373	28,347	67,093	-274,053	-123,514	-44,693	-105,846
Rose.low-cost	3,938	0	0	3,938 <sup>‡</sup>	-3,938	233	-4,115	-56	0	0	0	0 <sup>‡</sup>
Rose.entry level	3,946	2,130	5,036	-3,220	-2,236	649	-3,984	1,100	-5,486	-2,255	2,783	-6,013
Rose.middle range	13,724	5,348	980	7,395	6,744	1,854	5,178	-288	-18,605	-9,839	-3,319	-5,446
Rose.premium	22,916	4,560	20,901	-2,546	-15,518	2,244	-19,459	1,696	-13,156	-5,793	-4,275	-3,088
Red.low-cost	-132,421	67,993	-107,830	-92,585	-57,293	5,420	-35,042	-27,671	-5,226	-8,873	3,189	458
Red.entry level	75,054	826,403	-859,559	108,210	78,500	165,517	-163,505	76,488	-956,199	-743,134	357,778	-570,843
Red.middle range	374,544	251,880	29,192	93,472	163,184	71,248	176,950	-85,015	-427,605	-353,314	37,973	-112,264
Red.premium	22,792	401,772	-283,075	-95,906	39,428	79,659	-12,232	-27,999	-438,619	-358,078	-23,345	-57,196
Sparkling.low-cost	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Sparkling.entry level	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Sparkling.middle range	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Sparkling.premium	0	0	0	0 <sup>‡</sup>	38	0	0	38 <sup>‡</sup>	1,854	-10	-16	1,879
<b>Total</b>	<b>354,324</b>	<b>1,761,433</b>	<b>-1,300,402</b>	<b>-106,707</b>	<b>331,421</b>	<b>364,285</b>	<b>-6,187</b>	<b>-26,677</b>	<b>-2,050,528</b>	<b>-1,676,542</b>	<b>378,765</b>	<b>-752,751</b>

SSA category	2016 – 2015				2017 – 2016				2018 – 2017			
	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	-6,156	1,073	13,058	-20,287	-4,815	11,190	11,718	-27,723	2,789	405	10,204	-7,821
White.entry level	-37,779	7,206	25,192	-70,176	120,434	76,714	440	43,281	-81,171	5,800	-24,497	-62,474
White.middle range	-57,660	4,130	-21,052	-40,738	73,049	28,072	-1,642	46,619	-38,658	2,694	11,012	-52,365
White.premium	36,516	6,953	29,200	363	96,801	106,241	-31,908	22,468	22,755	6,653	55,052	-38,949
Rose.low-cost	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Rose.entry level	-577	111	-58	-629	-88	1,178	102	-1,367	-2,373	51	561	-2,985
Rose.middle range	596	664	6,541	-6,609	305	8,867	-8,845	284	-5,627	402	-1,128	-4,901
Rose.premium	3,767	316	455	2,997	2,555	5,756	1,106	-4,307	7,202	307	4,451	2,443
Red.low-cost	14,076	992	6,050	7,034	-14,990	19,074	37,689	-71,753	-2,861	556	-3,424	8
Red.entry level	107,116	65,429	-11,769	53,456	937,511	895,331	374,526	-332,346	-371,487	58,464	-349,639	-80,312
Red.middle range	-22,849	32,027	-69,314	14,438	468,741	405,024	125,943	-62,226	-86,088	27,328	-191,845	78,429
Red.premium	108,561	32,280	95,756	-19,475	299,627	466,326	49,016	-215,714	-86,710	26,731	-72,000	-41,441
Sparkling.low-cost	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Sparkling.entry level	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Sparkling.middle range	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Sparkling.premium	-1,892	64	-137	-1,819	0	0	0	0 <sup>‡</sup>	363	0	0	363 <sup>‡</sup>
<b>Total</b>	<b>143,720</b>	<b>151,244</b>	<b>73,920</b>	<b>-81,445</b>	<b>1,979,132</b>	<b>2,023,773</b>	<b>558,144</b>	<b>-602,784</b>	<b>-641,867</b>	<b>129,390</b>	<b>-561,252</b>	<b>-210,005</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42].

<sup>‡</sup> Indirectly calculated values.

(Continued on next page)

Table C.23 continued.

SSA category	2019 – 2018				2020 – 2019			
	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	22,085	3,680	8,419	9,986	-20,079	3,102	77,554	-100,735
White.entry level	100,921	33,614	29,412	37,895	120,086	21,448	-102,467	201,105
White.middle range	256,958	15,460	1,765	239,733	-185,654	24,249	-67,889	-142,013
White.premium	13,741	56,838	-40,442	-2,655	-82,427	25,547	-48,802	-59,171
Rose.low-cost	3	0	0	3 <sup>‡</sup>	3	0	15	-12
Rose.entry level	-199	33	74	-306	675	1	0	674
Rose.middle range	36,947	2,329	5,387	29,230	-32,160	3,533	-10,088	-25,605
Rose.premium	2,052	3,597	476	-2,021	-6,691	1,698	-217	-8,172
Red.low-cost	27,928	4,000	12,633	11,294	110,098	3,640	49,643	56,815
Red.entry level	302,447	409,320	-398,791	291,918	68,045	197,876	-664,235	534,403
Red.middle range	46,708	205,144	-25,046	-133,389	-113,451	92,007	-152,113	-53,345
Red.premium	4,144	200,268	-135,637	-60,486	-94,791	86,988	-90,508	-91,271
Sparkling.low-cost	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Sparkling.entry level	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Sparkling.middle range	0	0	0	0 <sup>‡</sup>	756	0	0	756 <sup>‡</sup>
Sparkling.premium	-246	57	246	-549	1,553	8	-66	1,610
<b>Total</b>	<b>813,488</b>	<b>934,339</b>	<b>-541,504</b>	<b>420,653</b>	<b>-234,037</b>	<b>460,096</b>	<b>-1,009,172</b>	<b>315,039</b>

SSA category	2016 – 2012				2020 – 2016				2020 – 2012			
	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	-27,576	3,113	3,822	-34,510	-21	20,737	262,562	-283,319	-27,597	48,959	627,035	-703,591
White.entry level	29,566	8,480	60,050	-38,965	260,270	142,158	-90,009	208,121	289,836	133,385	-1,011	157,461
White.middle range	-25,238	5,224	17,974	-48,436	105,696	52,020	-13,465	67,141	80,458	82,168	8,957	-10,667
White.premium	-136,974	22,209	-41,285	-117,898	50,870	196,874	-72,212	-73,792	-86,104	349,327	-182,658	-252,773
Rose.low-cost	0	0	0	0 <sup>‡</sup>	6	0	0	6 <sup>‡</sup>	6	0	0	6 <sup>‡</sup>
Rose.entry level	-4,352	413	3,203	-7,968	-1,985	2,183	3,371	-7,539	-6,338	6,495	19,263	-32,095
Rose.middle range	2,459	1,036	7,632	-6,209	-536	16,431	-10,733	-6,233	1,924	16,303	-175	-14,204
Rose.premium	-1,991	884	-2,709	-166	5,118	10,667	8,733	-14,282	3,127	13,904	3,919	-14,696
Red.low-cost	-180,863	13,179	-108,034	-86,008	120,176	35,346	218,915	-134,086	-60,688	207,291	458,329	-726,308
Red.entry level	-695,529	160,177	-486,866	-368,840	936,516	1,659,131	-1,181,806	459,191	240,987	2,519,449	-2,281,990	3,529
Red.middle range	87,273	48,820	111,346	-72,893	315,911	750,547	-279,514	-155,122	403,185	767,905	-99,275	-265,445
Red.premium	-267,838	77,873	-155,414	-190,298	122,270	864,145	-328,329	-413,546	-145,569	1,224,880	-670,062	-700,387
Sparkling.low-cost	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Sparkling.entry level	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
Sparkling.middle range	0	0	0	0 <sup>‡</sup>	756	0	0	756 <sup>‡</sup>	756	0	0	756 <sup>‡</sup>
Sparkling.premium	0	0	0	0 <sup>‡</sup>	1,670	0	0	1,670 <sup>‡</sup>	1,670	0	0	1,670 <sup>‡</sup>
<b>Total</b>	<b>-1,221,063</b>	<b>341,408</b>	<b>-590,281</b>	<b>-972,191</b>	<b>1,916,716</b>	<b>3,750,238</b>	<b>-1,482,487</b>	<b>-351,035</b>	<b>695,652</b>	<b>5,370,066</b>	<b>-2,117,669</b>	<b>-2,556,744</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42].

<sup>‡</sup> Indirectly calculated values.

Table C.24: *Veneto* SSA data by pairs of years and by category, liters

SSA category	2013 – 2012				2014 – 2013				2015 – 2014			
	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	126,192	125,753	-92,363	92,802	-213,087	31,975	-209,445	-35,617	-139,141	-84,600	109,392	-163,933
White.entry level	732,229	743,753	-78,878	67,354	164,430	188,278	56,459	-80,306	-418,436	-864,734	645,526	-199,229
White.middle range	110,892	155,793	-60,483	15,582	274,873	36,925	227,260	10,688	-343,236	-232,266	114,179	-225,148
White.premium	10,327	49,773	-34,382	-5,064	20,002	10,312	13,678	-3,988	-47,195	-50,204	-18,166	21,174
Rose.low-cost	-101,987	48,939	-146,372	-4,554	-58,565	3,507	-61,953	-118	-225	-186	2,930	-2,969
Rose.entry level	32,472	28,929	68,388	-64,844	11,086	7,559	-46,437	49,964	19,955	-35,877	44,276	11,556
Rose.middle range	27,151	11,557	2,119	13,474	21,866	3,859	10,776	7,231	-33,260	-22,500	-7,590	-3,170
Rose.premium	24,710	2,463	11,286	10,961	-12,017	1,942	-16,833	2,875	-4,505	-5,375	-3,966	4,836
Red.low-cost	-35,213	189,516	-300,550	75,821	-238,090	34,857	-225,340	-47,607	-133,957	-90,726	32,609	-75,840
Red.entry level	-318,400	459,626	-478,067	-299,960	-58,996	70,755	-69,895	-59,856	-209,086	-293,766	141,432	-56,752
Red.middle range	133,814	107,277	12,433	14,104	93,584	28,825	71,587	-6,828	-210,956	-150,058	16,128	-77,026
Red.premium	85,478	130,619	-92,030	46,888	-2,309	30,515	-4,686	-28,138	-61,721	-132,672	-8,650	79,601
Sparkling.low-cost	7,290	1,502	512	5,276	-4,540	724	512	-5,776	57,171	-1,989	-427	59,587
Sparkling.entry level	18,005	30,467	15,310	-27,772	395,686	7,003	34,921	353,761	-54,103	-132,797	-171,095	249,789
Sparkling.middle range	684,009	354,514	275,578	53,916	-43,386	109,558	299,928	-452,871	-39,881	-467,260	628,200	-200,821
Sparkling.premium	195,840	222,513	319,063	-345,736	-247,638	54,954	-176,251	-126,342	-111,800	-176,032	-283,753	347,985
<b>Total</b>	<b>1,732,807</b>	<b>2,662,995</b>	<b>-578,437</b>	<b>-351,751</b>	<b>102,898</b>	<b>621,547</b>	<b>-95,719</b>	<b>-422,929</b>	<b>-1,730,375</b>	<b>-2,741,041</b>	<b>1,241,025</b>	<b>-230,360</b>

SSA category	2016 – 2015				2017 – 2016				2018 – 2017			
	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	64,133	6,417	78,083	-20,367	249,534	111,487	116,745	21,302	180,225	9,898	249,548	-79,222
White.entry level	628,097	99,784	348,853	179,460	1,581,483	1,570,651	9,009	1,823	-525,772	101,316	-427,917	-199,171
White.middle range	11,246	18,938	-96,532	88,839	286,258	250,425	-14,648	50,481	91,540	16,826	68,788	5,926
White.premium	32,396	5,013	21,053	6,330	84,329	79,278	-23,810	28,861	80,889	5,203	43,054	32,632
Rose.low-cost	495	17	453	25	-333	437	-1,143	373	-657	13	16,447	-17,117
Rose.entry level	-54,710	5,411	-2,859	-57,262	75,934	45,978	3,966	25,990	64,456	3,550	39,139	21,767
Rose.middle range	38,200	1,834	18,075	18,291	9,341	40,639	-40,542	9,243	-10,862	1,999	-5,610	-7,251
Rose.premium	-4,702	555	800	-6,057	13,604	5,122	984	7,497	197	497	7,195	-7,495
Red.low-cost	-112,823	7,401	45,133	-165,357	202,444	46,115	91,120	65,208	-138,062	6,051	-37,252	-106,861
Red.entry level	-73,979	31,618	-5,687	-99,910	283,958	377,148	157,765	-250,955	-196,395	22,440	-134,198	-84,636
Red.middle range	-974	12,603	-27,275	13,698	128,636	162,919	50,660	-84,942	-78,316	9,811	-68,876	-19,252
Red.premium	113,119	15,394	45,664	52,061	329,090	249,469	26,222	53,398	-19,853	17,628	-47,482	10,001
Sparkling.low-cost	-32,632	2,210	-3,592	-31,249	-3,782	14,235	-4,064	-13,952	-13,649	561	-2,841	-11,369
Sparkling.entry level	-211,606	15,670	-92,884	-134,391	-79,950	109,669	-171,650	-17,969	-24,932	3,321	93,741	-121,994
Sparkling.middle range	1,268,452	60,262	3,903	1,204,287	609,672	1,341,137	-862,993	131,527	711,538	71,907	1,063,405	-423,774
Sparkling.premium	401,696	19,406	-41,274	423,563	1,168,947	428,888	691,512	48,547	832,359	42,199	-149,378	939,538
<b>Total</b>	<b>2,066,408</b>	<b>302,533</b>	<b>291,914</b>	<b>1,471,961</b>	<b>4,939,163</b>	<b>4,833,598</b>	<b>29,132</b>	<b>76,432</b>	<b>952,703</b>	<b>313,219</b>	<b>707,762</b>	<b>-68,279</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42]

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Table C.24 continued.

SSA category	2019 – 2018				2020 – 2019			
	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	298,248	107,665	246,327	-55,744	3,003,739	66,990	1,674,867	1,261,882
White.entry level	1,360,319	727,959	636,961	-4,601	-1,109,349	408,105	-1,949,692	432,239
White.middle range	22,459	149,123	17,027	-143,690	-21,307	66,096	-185,046	97,643
White.premium	3,418	54,407	-38,712	-12,277	41,125	23,789	-45,444	62,781
Rose.low-cost	9,951	0	0	9,951 <sup>‡</sup>	485,899	680	49,154	436,065
Rose.entry level	236,804	38,587	87,651	110,565	126,671	32,885	20,251	73,535
Rose.middle range	12,834	14,285	33,040	-34,490	-12,300	7,061	-20,164	803
Rose.premium	-250	4,008	530	-4,788	7,736	1,718	-219	6,237
Red.low-cost	62,552	26,642	84,136	-48,225	-44,620	15,808	215,590	-276,018
Red.entry level	48,812	148,613	-144,790	44,989	-142,870	67,676	-227,177	16,631
Red.middle range	58,063	66,169	-8,079	-27	-49,724	32,614	-53,921	-28,418
Red.premium	104,611	137,962	-93,439	60,088	136,343	66,877	-69,584	139,049
Sparkling.low-cost	-758	2,337	-1,835	-1,259	-999	960	-1,183	-776
Sparkling.entry level	329,231	22,645	42,324	264,261	890,357	32,298	272,065	585,995
Sparkling.middle range	1,516,832	687,827	-1,078,802	1,907,806	2,107,785	401,424	2,228,687	-522,326
Sparkling.premium	435,725	469,108	2,012,361	-2,045,743	-97,434	232,867	-1,911,365	1,581,064
<b>Total</b>	<b>4,498,850</b>	<b>2,657,337</b>	<b>1,794,698</b>	<b>46,815</b>	<b>5,321,051</b>	<b>1,457,848</b>	<b>-3,182</b>	<b>3,866,385</b>

SSA category	2016 – 2012				2020 – 2016				2020 – 2012			
	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
White.low-cost	-161,903	24,374	29,927	-216,204	3,731,745	206,595	2,615,867	909,283	3,569,842	383,381	4,910,135	-1,723,674
White.entry level	1,106,320	144,157	1,020,823	-58,661	1,306,681	2,910,562	-1,842,855	238,974	2,413,001	2,267,474	-17,179	162,706
White.middle range	53,775	30,196	103,899	-80,320	378,950	464,061	-120,122	35,011	432,724	474,965	51,775	-94,016
White.premium	15,530	9,647	-17,933	23,816	209,761	146,909	-53,885	116,737	225,290	151,743	-79,345	152,891
Rose.low-cost	-160,282	9,486	-162,289	-7,478	494,860	810	75,453	418,597	334,578	149,200	350,316	-164,938
Rose.entry level	8,803	5,607	43,495	-40,300	503,864	85,202	131,577	287,084	512,666	88,194	261,581	162,891
Rose.middle range	53,956	2,240	16,494	35,222	-988	75,309	-49,193	-27,103	52,968	35,235	-379	18,112
Rose.premium	3,486	477	-1,463	4,471	21,286	9,492	7,771	4,023	24,772	7,508	2,116	15,148
Red.low-cost	-520,082	36,733	-301,121	-255,694	82,314	85,456	529,266	-532,408	-437,768	577,777	1,277,490	-2,293,035
Red.entry level	-660,460	89,087	-270,784	-478,763	-6,495	698,890	-497,822	-207,563	-666,955	1,401,259	-1,269,190	-799,024
Red.middle range	15,467	20,793	47,423	-52,748	58,658	301,903	-112,433	-130,812	74,125	327,053	-42,282	-210,646
Red.premium	134,567	25,317	-50,526	159,777	550,190	462,290	-175,646	263,546	684,757	398,218	-217,842	504,382
Sparkling.low-cost	27,289	291	-92	27,089	-19,187	26,378	-18,925	-26,640	8,102	4,579	-3,189	6,712
Sparkling.entry level	147,982	5,905	-38,960	181,036	1,114,706	203,226	250,053	661,426	1,262,687	92,884	-3,039	1,172,842
Sparkling.middle range	1,869,194	68,713	1,241,058	559,423	4,945,826	2,485,251	552,246	1,908,329	6,815,021	1,080,805	2,707,032	3,027,183
Sparkling.premium	238,098	43,128	-429,670	624,639	2,339,597	794,770	84,204	1,460,623	2,577,694	678,374	-751,171	2,650,491
<b>Total</b>	<b>2,171,738</b>	<b>516,153</b>	<b>1,230,281</b>	<b>425,304</b>	<b>15,711,767</b>	<b>8,957,104</b>	<b>1,375,556</b>	<b>5,379,107</b>	<b>17,883,505</b>	<b>8,118,650</b>	<b>7,176,829</b>	<b>2,588,026</b>

Source: own elaboration of Customs data archive of Arsenal LLC[42].

<sup>‡</sup> Indirectly calculated values.

# Appendix D

## SSA result tables

Table D.1: SSA results by region, liters

SSA model	Year	Apulia			
		EC	NS	IM	RS
Dynamic	2013–2012	164,114	465,277	-336,520	35,358
	2014–2013	-149,186	100,396	-99,521	-150,061
	2015–2014	316,396	-399,919	181,295	535,020
	2016–2015	411,207	63,518	55,622	292,067
	2017–2016	2,185,342	1,004,838	473,777	706,727
	2018–2017	142,870	87,956	-357,785	412,699
	2019–2018	725,839	726,544	14,140	-14,845
	2020–2019	36,231	364,144	52,319	-380,232
	2016–2012	742,531	229,272	-199,124	712,383
	2020–2016	3,090,282	2,183,482	182,451	724,348
Static	2020–2012	3,832,813	2,412,754	-16,673	1,436,732
	2016–2012	742,531	90,182	-182,685	835,034
	2020–2016	3,090,282	1,862,058	1,211,248	16,976
	2020–2012	3,832,813	1,418,485	-698,044	3,112,372

SSA model	Year	Emilia-Romagna			
		EC	NS	IM	RS
Dynamic	2013–2012	4,309,518	3,117,780	815,960	375,778
	2014–2013	1,309,747	862,598	911,237	-464,088
	2015–2014	-5,372,415	-4,105,521	-1,136,593	-130,301
	2016–2015	-303,594	358,408	-595,465	-66,536
	2017–2016	3,638,875	4,511,368	-1,326,581	454,089
	2018–2017	-271,011	273,194	-985,037	440,832
	2019–2018	982,797	2,143,864	-893,790	-267,277
	2020–2019	56,731	995,321	673,150	-1,611,739
	2016–2012	-56,744	233,264	-4,861	-285,147
	2020–2016	4,407,393	7,923,746	-2,532,258	-984,096
Static	2020–2012	4,350,649	8,157,011	-2,537,119	-1,269,243
	2016–2012	-56,744	604,301	-416,462	-244,582
	2020–2016	4,407,393	8,359,980	-4,889,086	936,498
	2020–2012	4,350,649	9,505,150	-5,277,323	122,821

Source: own elaboration of Customs data archive of Arsenal LLC[42]

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Table D.1 continued.

SSA model	Year	Piedmont			
		EC	NS	IM	RS
Dynamic	2013-2012	3,960,405	2,578,331	2,360,743	-978,669
	2014-2013	664,112	736,802	-624,250	551,559
	2015-2014	-5,062,364	-3,389,362	-753,993	-919,009
	2016-2015	-413,700	274,525	-55,083	-633,142
	2017-2016	2,323,069	3,375,527	-502,514	-549,943
	2018-2017	575,667	196,532	1,333,315	-954,180
	2019-2018	324,894	1,663,876	-635,848	-703,134
	2020-2019	-569,712	742,563	-1,575,480	263,204
	2016-2012	-85,1548	200,297	927,416	-1,979,261
	2020-2016	2,653,918	5,978,498	-1,380,527	-1,944,053
Static	2020-2012	1,802,370	6,178,794	-453,111	-3,923,314
	2016-2012	-85,1548	499,743	-77,924	-1,273,367
	2020-2016	2,653,918	6,255,163	981,908	-4,583,153
	2020-2012	1,802,370	7,860,536	1,106,991	-7,165,157

SSA model	Year	Tuscany			
		EC	NS	IM	RS
Dynamic	2013-2012	354,324	1,761,433	-1,300,402	-110,644
	2014-2013	331,421	364,285	-6,187	-26,677
	2015-2014	-2,050,528	-1,676,542	378,765	-752,751
	2016-2015	143,720	151,244	73,920	-81,445
	2017-2016	1,979,132	2,023,773	558,144	-602,784
	2018-2017	-641,867	129,390	-561,252	-210,005
	2019-2018	813,488	934,339	-541,504	420,653
	2020-2019	-234,037	460,096	-1,009,172	315,039
	2016-2012	-1,221,063	600,420	-853,904	-971,517
	2020-2016	1,916,716	3,547,598	-1,553,785	-77,097
Static	2020-2012	695,652	4,148,018	-2,407,689	-1,048,614
	2016-2012	-1,221,063	341,408	-590,281	-972,191
	2020-2016	1,916,716	3,750,238	-1,482,487	-351,035
	2020-2012	695,652	5,370,066	-2,117,669	-2,556,744

SSA model	Year	Veneto			
		EC	NS	IM	RS
Dynamic	2013-2012	1,732,807	2,662,995	-578,437	-351,751
	2014-2013	102,898	621,547	-95,719	-422,929
	2015-2014	-1,730,375	-2,741,041	1,241,025	-230,360
	2016-2015	2,066,408	302,533	291,914	1,471,961
	2017-2016	4,939,163	4,833,598	29,132	76,432
	2018-2017	952,703	313,219	707,762	-68,279
	2019-2018	4,498,850	2,657,337	1,794,698	46,815
	2020-2019	5,321,051	1,457,848	-3,182	3,866,385
	2016-2012	2,171,738	846,034	858,784	466,920
	2020-2016	15,711,767	9,262,003	2,528,411	3,921,353
Static	2020-2012	17,883,505	10,108,037	3,387,195	4,388,273
	2016-2012	2,171,738	516,153	1,230,281	425,304
	2020-2016	15,711,767	8,957,104	1,375,556	5,379,107
	2020-2012	17,883,505	8,118,650	7,176,829	2,588,026

Source: own elaboration of Customs data archive of Arsenal LLC[42]



Table D.2: *Apulia SSA data by model by category, liters*

SSA model	Year	White.low-cost				White.entry level				White.middle range				White.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013–2012	-4,392	1,333	-979	-4,746	136,512	8,439	-895	128,968	9,671	2,450	-951	8,173	-5,844	6,109	-4,220	-7,733
	2014–2013	5,040	0	0	5,040 <sup>‡</sup>	-9,501	9,719	2,915	-22,135	14,841	1,049	6,459	7,332	-6,412	845	1,121	-8,378
	2015–2014	110,586	-1,302	1,683	110,204	14,693	-39,993	29,855	24,831	11,862	-8,417	4,138	16,141	-1,134	-2,035	-736	1,637
	2016–2015	-33,582	3,939	47,931	-85,451	124,233	5,775	20,189	98,270	-905	1,514	-7,718	5,299	8,187	230	965	6,993
	2017–2016	-21,168	36,225	37,934	-95,327	212,937	129,699	744	82,494	59,647	19,225	-1,125	41,546	6,822	6,592	-1,980	2,210
	2018–2017	35,071	1,200	30,260	3,611	341,495	9,990	-42,193	373,698	-40,967	2,034	8,317	-51,318	-2,156	429	3,549	-6,134
	2019–2018	-30,890	15,141	34,641	-80,672	87,965	133,849	117,117	-163,001	1,577	9,819	1,121	-9,363	7,989	3,092	-2,200	7,097
	2020–2019	319,225	4,445	111,129	203,651	-378,393	63,959	-305,559	-136,793	2,880	4,359	-12,203	10,724	-7,572	1,885	-3,600	-5,856
	2020–2012	379,890	60,981	262,599	56,310 <sup>‡</sup>	529,940	321,437	-177,828	386,331	58,607	32,034	-1,961	28,535	-120	17,148	-7,102	-10,165
Static	2016–2012	77,652	258	317	77,076	265,937	1,636	11,583	252,719	35,470	475	1,634	33,361	-5,203	1,184	-2,201	-4,186
	2020–2016	302,238	67,129	849,969	-614,860	264,003	240,345	-152,177	175,835	23,138	35,626	-9,222	-3,267	5,083	12,216	-4,481	-2,652
	2020–2012	379,890	4,063	52,040	323,787	529,940	25,728	-195	504,407	58,607	7,468	814	50,325	-120	18,626	-9,739	-9,007
SSA model	Year	Rosé.low-cost				Rosé.entry level				Rosé.middle range				Rosé.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013–2012	-4,950	1,775	-5,310	-1,416	83,352	25,250	59,692	-1,590	-1,541	757	139	-2,436	-1,877	706	3,236	-5,818
	2014–2013	-900	53	-941	-13	-104,735	9,852	-60,520	-54,067	-98	56	157	-311	-111	27	-231	93
	2015–2014	0	0	0	0 <sup>‡</sup>	12,718	-15,970	19,709	8,979	54	-221	-75	349	-296	-88	-65	-144
	2016–2015	0	0	0	0 <sup>‡</sup>	51,788	2,539	-1,342	50,591	2,691	31	305	2,355	645	1	2	641
	2017–2016	0	0	0	0 <sup>‡</sup>	82,236	55,780	4,811	21,645	-2,539	1,590	-1,586	-2,543	3,884	304	58	3,522
	2018–2017	19,116	0	0	19,116 <sup>‡</sup>	7,037	4,112	45,334	-42,409	6,626	21	-59	6,663	-1,442	90	1,305	-2,837
	2019–2018	4,565	3,017	11,037	-9,489	-19,903	34,024	77,285	-131,212	8,214	1,213	2,806	4,195	5,684	494	65	5,125
	2020–2019	80,336	1,618	116,975	-38,257	-26,279	13,371	8,234	-47,883	9,770	1,086	-3,102	11,785	-5,520	602	-77	-6,045
	2020–2012	-5,850	1,828	-6,250	-1,428 <sup>‡</sup>	43,123	21,671	17,539	3,913	1,107	623	527	-43	-1,639	646	2,942	-5,228
Static	2016–2012	104,018	4,635	128,013	-28,630 <sup>‡</sup>	43,091	107,286	135,664	-199,859	22,070	3,910	-1,941	20,101	2,606	1,490	1,352	-236
	2020–2016	98,168	6,463	121,763	-30,058 <sup>‡</sup>	86,214	128,957	153,203	-195,946	23,177	4,533	-1,414	20,059	967	2,136	4,294	-5,463
	2020–2012	98,168	5,412	12,707	80,048	86,214	76,980	228,320	-219,087	23,177	2,306	-25	20,896	967	2,152	607	-1,792

Source: own elaboration of Customs data archive of Arsenal LLC[42].

<sup>‡</sup> Indirectly calculated values.

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Table D.2 continued.

SSA model	Year	Red.low-cost				Red.entry level				Red.middle range				Red.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013–2012	-9,792	10,592	-16,798	-3,586	-179,086	351,801	-365,915	-164,972	10,712	15,372	1,782	-6,442	870	19,383	-13,657	-4,856
	2014–2013	15,929	1,485	-9,603	24,046	16,589	57,978	-57,273	15,884	54,270	3,630	9,015	41,625	20,403	3,830	-588	17,162
	2015–2014	7,606	-10,602	3,811	14,397	107,287	-257,492	123,968	240,810	40,479	-29,871	3,210	67,140	12,040	-21,995	-1,434	35,469
	2016–2015	178,694	1,657	10,106	166,931	42,418	37,612	-6,765	11,571	21,070	5,318	-11,510	27,261	21,968	3,311	9,821	8,836
	2017–2016	178,193	100,379	198,340	-120,527	1,173,079	506,227	211,760	455,091	244,687	78,235	24,327	142,126	242,097	52,611	5,530	183,955
	2018–2017	-100,120	7,996	-49,226	-58,889	-115,538	45,734	-273,506	112,235	-7,125	8,318	-58,392	42,950	20,764	7,122	-19,185	32,826
	2019–2018	494,352	48,197	152,206	293,949	42,462	347,816	-338,869	33,515	110,866	65,451	-7,991	53,406	38,967	60,285	-40,830	19,512
	2020–2019	435,551	54,641	745,197	-364,287	-514,479	153,486	-515,225	-152,740	148,964	35,911	-59,371	172,424	-28,253	28,762	-29,926	-27,089
	2016–2012	192,437	3,133	-12,484	201,788	-12,793	189,899	-305,986	103,293	126,530	-5,551	2,497	129,584	55,281	4,528	-5,858	56,610
	2020–2016	1,007,976	211,213	1,046,518	-249,754	585,524	1,053,263	-915,840	448,101	497,393	187,914	-101,427	410,906	273,575	148,781	-84,411	209,204
Static	2020–2012	1,200,413	214,346	1,034,033	-47,966	572,731	1,243,163	-1,221,826	551,395	623,923	182,363	-98,929	540,490	328,856	153,309	-90,268	265,815
	2016–2012	192,437	2,053	-16,830	207,213	-12,793	68,187	-207,259	126,279	126,530	2,980	6,796	116,755	55,281	3,757	-7,498	59,022
	2020–2016	1,007,976	186,012	1,152,050	-330,085	585,524	938,086	-668,202	315,641	497,393	144,976	-53,991	406,408	273,575	97,493	-37,042	213,123
	2020–2012	1,200,413	32,292	71,399	1,096,721	572,731	1,072,532	-971,446	471,645	623,923	46,866	-6,059	583,116	328,856	59,093	-32,326	302,089

SSA model	Year	Sparkling.low-cost				Sparkling.entry level				Sparkling.middle range				Sparkling.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013–2012	126,050	20,763	7,082	98,204	4,428	546	274	3,607	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
	2014–2013	-149,021	11,503	8,131	-168,655	-5,479	368	1,837	-7,684	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
	2015–2014	-24,585	-11,741	-2,521	-10,324	25,006	-193	-249	25,448	6	0	0	6 <sup>‡</sup>	76	0	0	76 <sup>‡</sup>
	2016–2015	19,724	711	-1,155	20,169	-25,754	877	-5,201	-21,431	-6	0	0	-6	36	3	-5	39
	2017–2016	4,635	17,922	-5,117	-8,170	945	0	0	945 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	-112	49	80	-241
	2018–2017	-45,225	892	-4,516	-41,601	25,335	19	526	24,790	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
	2019–2018	0	0	0	0 <sup>‡</sup>	-26,280	4,147	7,751	-38,178	0	0	0	0 <sup>‡</sup>	270	0	0	270 <sup>‡</sup>
	2020–2019	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	18	-151	133
	2016–2012	-27,833	21,236	11,537	-60,606	-1,800	1,599	-3,338	-60	0	0	0	0 <sup>‡</sup>	112	3	-5	115 <sup>‡</sup>
	2020–2016	-40,590	18,814	-9,633	-49,771 <sup>‡</sup>	0	4,166	8,277	-12,443 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	158	68	-72	162 <sup>‡</sup>
Static	2020–2012	-68,423	40,050	1,904	-110,376 <sup>‡</sup>	-1,800	5,764	4,939	-12,503 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	270	70	-77	277 <sup>‡</sup>
	2016–2012	-27,833	4,024	-1,266	-30,591	-1,800	106	-698	-1,207	0	0	0	0 <sup>‡</sup>	112	0	0	112 <sup>‡</sup>
	2020–2016	-40,590	33,211	-23,828	-49,973	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	158	91	10	57
	2020–2012	-68,423	63,301	-44,088	-87,636	-1,800	1,665	-54	-3,411	0	0	0	0 <sup>‡</sup>	270	0	0	270 <sup>‡</sup>

Source: own elaboration of Customs data archive of Arsenal LLC[42].

<sup>‡</sup> Indirectly calculated values.

Table D.3: Emilia-Romagna SSA data by model by category, liters

SSA model	Year	White.low-cost				White.entry level				White.middle range				White.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013–2012	-37,266	14,486	-10,640	-41,112	106,599	56,591	-6,002	56,009	-3,516	1,229	-477	-4,268	-2,625	1,065	-736	-2,954
	2014–2013	-10,470	619	-4,056	-7,033	-9,500	17,336	5,198	-32,033	3,314	32	194	3,088	190	52	69	68
	2015–2014	2,700	0	0	2,700 <sup>‡</sup>	-47,325	-73,255	54,685	-28,755	1,823	-994	489	2,328	116	-278	-101	494
	2016–2015	21,294	92	1,119	20,083	31,019	8,048	28,138	-5,168	-3,465	193	-985	-2,674	-39	41	170	-250
	2017–2016	121,789	10,594	11,094	100,101	191,781	118,014	677	73,090	8,922	974	-57	8,005	671	509	-153	315
	2018–2017	213,396	2,874	72,465	138,057	-140,076	9,051	-38,227	-110,899	-2,705	219	897	-3,821	2,466	36	297	2,132
	2019–2018	98,249	56,681	129,680	-88,112	15,582	50,339	44,046	-78,802	6,099	1,329	152	4,618	-1,145	677	-482	-1,340
	2020–2019	515,750	31,252	781,364	-296,867	-183,355	22,858	-109,204	-97,009	-6,920	992	-2,778	-5,134	2,250	215	-410	2,446
Static	2016–2012	-23,742	15,197	-13,577	-25,362 <sup>‡</sup>	80,793	8,720	82,020	-9,947	-1,845	460	-779	-1,526	-2,358	880	-596	-2,642
	2020–2016	949,184	101,402	994,603	-146,821	-116,067	200,262	-102,709	-213,620	5,397	3,514	-1,786	3,669	4,242	1,436	-747	3,553
	2020–2012	925,442	116,599	981,026	-172,183 <sup>‡</sup>	-35,274	208,982	-20,689	-223,567	3,552	3,974	-2,565	2,143	1,884	2,316	-1,344	911
	2016–2012	-23,742	2,808	3,447	-29,997	80,793	10,969	77,673	-7,849	-1,845	238	820	-2,903	-2,358	206	-384	-2,181
	2020–2016	949,184	19,632	248,576	680,976	-116,067	218,691	-138,467	-196,291	5,397	1,804	-467	4,060	4,242	943	-346	3,645
2020–2012	925,442	44,163	565,611	315,667	-35,274	172,529	-1,307	-206,496	3,552	3,747	408	-603	1,884	3,247	-1,698	335	

SSA model	Year	Rosé.low-cost				Rosé.entry level				Rosé.middle range				Rosé.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013–2012	5	0	0	5 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
	2014–2013	-5	0	-5	0	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
	2015–2014	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
	2016–2015	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
	2017–2016	0	0	0	0 <sup>‡</sup>	16,763	0	0	16,763 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
	2018–2017	0	0	0	0 <sup>‡</sup>	-563	330	3,643	-4,536	0	0	0	0 <sup>‡</sup>	225	0	0	225 <sup>‡</sup>
	2019–2018	4	0	0	4	25,767	2,556	5,807	17,403	0	0	0	0 <sup>‡</sup>	-225	36	5	-265
	2020–2019	18,041	0	19	18,022	-35,499	2,867	1,766	-40,132	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
	2016–2012	0	0	-5	5 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
	2020–2016	18,045	0	19	18,026 <sup>‡</sup>	6,468	5,754	11,216	-10,502 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	36	5	-40 <sup>‡</sup>
2020–2012	18,045	1	14	18,031 <sup>‡</sup>	6,468	5,754	11,216	-10,502 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	36	5	-40 <sup>‡</sup>	
Static	2016–2012	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
	2020–2016	18,045	0	0	18,045 <sup>‡</sup>	6,468	0	0	6,468 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
	2020–2012	18,045	0	0	18,045 <sup>‡</sup>	6,468	0	0	6,468 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>

Source: own elaboration of Customs data archive of Arsenal LLC[42].

<sup>‡</sup> Indirectly calculated values.

(Continued on next page)

Table D.3 continued.

SSA model	Year	Red.low-cost				Red.entry level				Red.middle range				Red.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013–2012	-19,256	18,962	-30,071	-8,147	79,675	147,755	-153,683	85,603	6,524	5,736	665	123	-14,063	4,357	-3,070	-15,350
	2014–2013	-19,848	2,557	-16,530	-5,875	-73,061	33,512	-33,105	-73,468	-90	1,504	3,735	-5,329	2,054	18	-3	2,039
	2015–2014	-16,632	-6,040	2,171	-12,763	-69,380	-127,483	61,376	-3,273	-8,595	-6,544	703	-2,754	3,076	-607	-40	3,723
	2016–2015	20,616	230	1,402	18,984	-49,332	14,449	-2,599	-61,182	-9,459	570	-1,234	-8,795	-3,627	185	548	-4,360
	2017–2016	63,857	12,083	23,875	27,899	241,637	165,491	69,226	6,920	27,288	3,215	1,000	23,074	2,774	795	84	1,895
	2018–2017	252,815	1,799	-11,073	262,089	10,305	12,154	-72,686	70,837	-15,260	682	-4,785	-11,157	2,840	90	-243	2,992
	2019–2018	357,893	54,292	171,455	132,147	35,639	98,906	-96,361	33,095	10,163	3,047	-372	7,487	4,848	1,170	-792	4,470
	2020–2019	566,995	47,957	654,037	-135,000	-256,954	45,256	-151,915	-150,295	-8,381	2,014	-3,329	-7,066	13,807	838	-872	13,841
	2016–2012	-35,120	15,709	-43,028	-7,801	-112,098	68,232	-128,010	-52,320	-11,621	1,265	3,869	-16,755	-12,560	3,953	-2,564	-13,948
	2020–2016	1,241,560	116,130	838,294	287,136	30,628	321,806	-251,735	-39,442	13,810	8,957	-7,486	12,339	24,268	2,892	-1,823	23,199
Static	2020–2012	1,206,440	131,839	795,266	279,335	-81,470	390,038	-379,745	-91,762	2,189	10,223	-3,617	-4,416	11,708	6,845	-4,387	9,250
	2016–2012	-35,120	3,675	-30,128	-8,667	-112,098	28,638	-87,048	-53,688	-11,621	1,112	2,536	-15,268	-12,560	845	-1,686	-11,719
	2020–2016	1,241,560	22,391	138,677	1,080,492	30,628	306,669	-218,442	-57,600	13,810	5,957	-2,219	10,071	24,268	1,473	-560	23,355
	2020–2012	1,206,440	57,809	127,818	1,020,813	-81,470	450,459	-408,003	-123,926	2,189	17,487	-2,261	-13,037	11,708	13,285	-7,267	5,691
SSA model	Year	Sparkling.low-cost				Sparkling.entry level				Sparkling.middle range				Sparkling.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013–2012	3,352,195	2,647,410	902,971	-198,187	838,411	204,042	102,531	531,838	1,500	13,222	10,278	-22,000	1,337	2,924	4,193	-5,781
	2014–2013	1,367,069	714,293	504,939	147,837	59,522	89,361	445,583	-475,422	-3,553	2,666	7,298	-13,517	-5,876	649	-2,082	-4,444
	2015–2014	-4,209,173	-3,472,640	-745,551	9,018	-1,023,148	-405,638	-522,622	-94,887	-4,202	-10,725	14,419	-7,896	-1,676	-1,317	-2,122	1,763
	2016–2015	-152,294	314,572	-511,370	44,504	-137,896	18,640	-110,491	-46,046	-18,256	1,271	82	-19,609	-2,155	117	-248	-2,023
	2017–2016	2,900,677	4,010,006	-1,144,967	35,638	41,470	180,713	-282,845	143,603	17,369	8,417	-5,416	14,369	3,877	559	902	2,416
	2018–2017	-908,043	236,252	-1,196,458	52,163	317,155	8,887	250,869	57,399	-7,486	718	10,622	-18,826	3,920	101	-359	4,177
	2019–2018	381,414	1,747,653	-1,372,387	6,148	27,614	121,182	226,489	-320,056	18,362	4,568	-7,164	20,958	2,534	1,430	6,135	-5,032
	2020–2019	-191,721	782,696	-964,808	-9,609	-471,101	54,352	457,839	-983,291	94,419	3,232	17,944	73,242	-600	792	-6,503	5,111
	2016–2012	357,797	203,635	150,989	3,173	-263,111	-93,595	-84,999	-84,516	-24,510	6,434	32,078	-63,022	-8,370	2,373	-259	-10,485
	2020–2016	2,182,326	6,776,606	-4,678,621	84,341	-84,860	365,133	652,351	-1,102,345	122,664	16,935	15,987	89,742	9,730	2,883	175	6,672
Static	2020–2012	2,540,123	6,980,241	-4,527,631	87,513	-347,971	271,538	567,352	-1,186,861	98,154	23,369	48,065	26,720	1,360	5,256	-84	-3,813
	2016–2012	357,797	513,132	-161,412	6,077	-263,111	39,548	-260,921	-41,738	-24,510	2,563	46,287	-73,360	-8,370	567	-5,647	-3,290
	2020–2016	2,182,326	7,430,910	-5,331,454	82,869	-84,860	334,877	412,038	-831,776	122,664	15,597	3,466	103,602	9,730	1,036	110	8,583
	2020–2012	2,540,123	8,071,137	-5,621,366	90,351	-347,971	622,062	-20,350	-949,683	98,154	40,310	100,963	-43,120	1,360	8,915	-9,872	2,316

Source: own elaboration of Customs data archive of Arsenal LLC[42]

Table D.4: *Piedmont* SSA data by model by category, liters

SSA model	Year	White.low-cost				White.entry level				White.middle range				White.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013 - 2012	12,660	546	-401	12,515	-22,415	23,714	-2,515	-43,614	18,183	21,252	-8,251	5,182	27,996	102,776	-70,994	-3,786
	2014 - 2013	-8,772	855	-5,602	-4,025	22,950	3,296	989	18,665	132,429	5,218	32,114	95,098	96,521	21,688	28,766	46,067
	2015 - 2014	8,433	-1,469	1,900	8,002	-5,620	-20,325	15,173	-467	61,447	-56,996	28,018	90,424	-75,406	-119,652	-43,295	87,541
	2016 - 2015	-12,801	481	5,854	-19,136	36,285	2,489	8,702	25,094	-86,417	9,610	-48,983	-47,044	24,062	13,211	55,480	-44,628
	2017 - 2016	15	583	610	-1,178	-78,511	48,281	277	-127,068	68,697	86,397	-5,054	-12,647	134,798	181,849	-54,617	7,566
	2018 - 2017	-675	26	664	-1,365	27,307	608	-2,568	29,267	43,077	5,212	21,309	16,556	127,028	10,778	89,191	27,060
	2019 - 2018	-659	104	238	-1,001	-26,045	9,175	8,028	-43,249	-215,615	48,518	5,540	-269,673	-102,724	106,312	-75,645	-133,391
	2020 - 2019	23,716	0	3	23,713	-13,725	2,193	-10,477	-5,441	28,918	6,274	-17,566	40,209	-39,248	39,009	-74,520	-3,737
	2016 - 2012	-480	413	1,750	-2,643	31,200	9,175	22,348	-322	125,642	-20,916	2,898	143,660	73,174	18,023	-30,043	85,194
	2020 - 2016	22,397	713	1,515	20,169	-90,975	60,257	-4,739	-146,492	-74,924	146,401	4,229	-225,554	119,855	337,948	-115,590	-102,503
Static	2020 - 2012	21,917	1,127	3,265	17,526	-59,774	69,432	17,608	-146,814	50,718	125,485	7,128	-81,895	193,028	355,971	-145,634	-17,309
	2016 - 2012	-480	106	130	-716	31,200	4,596	32,548	-5,945	125,642	4,119	14,173	107,349	73,174	19,920	-37,030	90,284
	2020 - 2016	22,397	1,080	13,675	7,642	-90,975	89,468	-56,648	-123,795	-74,924	160,102	-41,443	-193,583	119,855	336,983	-123,603	-93,526
	2020 - 2012	21,917	1,665	21,328	-1,076	-59,774	72,297	-548	-131,524	50,718	64,791	7,063	-21,136	193,028	313,331	-163,837	43,534
SSA model	Year	Rosé.low-cost				Rosé.entry level				Rosé.middle range				Rosé.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013-2012	2	0	0	2 <sup>‡</sup>	5	0	0	5 <sup>‡</sup>	-92	111	20	-224	19,838	2,184	10,007	7,647
	2014-2013	-2	0	-2	-0	68	0	-2	69	1,406	16	45	1,345	-14,834	1,599	-13,864	-2,570
	2015-2014	1,800	0	0	1,800 <sup>‡</sup>	-71	-19	23	-75	-56	-434	-146	524	-11,802	-3,151	-2,325	-6,325
	2016-2015	0	61	1,648	-1,710	674	0	-0	673	1,053	55	545	452	-173	14	20	-206
	2017-2016	-1,800	795	-2,078	-517	3,236	298	26	2,912	-1,458	1,182	-1,179	-1,461	2,165	99	19	2,046
	2018-2017	0	0	0	0 <sup>‡</sup>	-401	77	850	-1,328	-1,220	24	-67	-1,176	1,383	47	682	654
	2019-2018	0	0	0	0 <sup>‡</sup>	-2,156	554	1,258	-3,968	0	0	0	0 <sup>‡</sup>	5,124	595	79	4,450
	2020-2019	2	0	0	2 <sup>‡</sup>	-544	92	57	-693	473	0	0	473 <sup>‡</sup>	-7,150	608	-78	-7,680
	2016-2012	1,800	61	1,646	92 <sup>‡</sup>	675	-18	21	672 <sup>‡</sup>	2,311	-251	465	2,097	-6,971	645	-6,162	-1,453
	2020-2016	-1,798	795	-2,078	-515 <sup>‡</sup>	135	1,022	2,191	-3,077	-2,205	1,206	-1,247	-2164 <sup>‡</sup>	1,522	1,350	702	-530
Static	2020-2012	2	856	-432	-422 <sup>‡</sup>	810	1,003	2,212	-2405 <sup>‡</sup>	106	955	-782	-67 <sup>‡</sup>	-5,449	1,994	-5,460	-1,983
	2016-2012	1,800	0	0	1,800 <sup>‡</sup>	675	0	0	675 <sup>‡</sup>	2,311	22	159	2,130	-6,971	423	-1,297	-6,097
	2020-2016	-1,798	1,473	137,187	-140,457	135	552	853	-1,270	-2,205	2,191	-1,431	-2,965	1,522	184	151	1,187
	2020-2012	2	0	0	2 <sup>‡</sup>	810	0	0	810 <sup>‡</sup>	106	339	-4	-230	-5,449	6,657	1,876	-13,982

Source: own elaboration of Customs data archive of Arsenal LLC[42].

<sup>‡</sup> Indirectly calculated values.

(Continued on next page)

Table D.4 continued.

SSA model	Year	Red.low-cost				Red.entry level				Red.middle range				Red.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013-2012	49,013	6,593	-10,456	52,875	19,846	75,463	-78,491	22,873	16,889	13,259	1,537	2,094	34,110	67,987	-47,901	14,024
	2014-2013	-42,386	4,184	-27,049	-19,521	19,392	15,883	-15,690	19,199	71,086	3,583	8,899	58,603	48,847	15,269	-2,345	35,922
	2015-2014	-9,184	-7,324	2,633	-4,492	-54,986	-74,373	35,807	-16,420	110,684	-34,012	3,655	141,040	-49,660	-79,302	-5,170	34,813
	2016-2015	9,420	653	3,982	4,785	55,167	7,935	-1,427	48,659	-95,691	8,256	-17,868	-86,079	-32,780	8,766	26,005	-67,552
	2017-2016	72,790	12,623	24,943	35,224	184,742	127,205	53,211	4,325	10,352	64,756	20,136	-74,539	146,824	99,150	10,422	37,252
	2018-2017	-97,908	1,999	-12,306	-87,600	-168,056	9,323	-55,753	-121,625	-66,012	3,096	-21,732	-47,375	-36,175	7,322	-19,723	-23,775
	2019-2018	44,640	548	1,731	42,361	32,072	48,097	-46,860	30,834	14,811	14,361	-1,753	2,204	-22,015	52,898	-35,827	-39,086
	2020-2019	19,523	3,287	44,830	-28,594	-71,729	23,015	-77,256	-17,487	-10,867	7,229	-11,952	-6,144	-63,645	21,398	-22,264	-62,779
	2016-2012	6,863	4,106	-30,891	33,647	39,418	24,908	-59,801	74,312	102,968	-8,914	-3,776	115,657	517	12,720	-29,411	17,208
Static	2020-2016	39,046	18,457	59,197	-38,609	-22,971	207,639	-126,657	-103,953	-51,716	89,441	-15,302	-125,855	24,989	180,769	-67,392	-88,388
	2020-2012	45,908	22,564	28,306	-4,962	16,448	232,547	-186,459	-29,641	51,252	80,527	-19,078	-10,198	25,506	193,489	-96,803	-71,180
	2016-2012	6,863	1,278	-10,476	16,061	39,418	14,627	-44,458	69,250	102,968	2,570	5,861	94,536	517	13,178	-26,299	13,638
	2020-2016	39,046	23,392	144,879	-129,226	-22,971	235,723	-167,906	-90,787	-51,716	119,998	-44,689	-127,025	24,989	183,735	-69,810	-88,937
	2020-2012	45,908	20,101	44,444	-18,637	16,448	230,065	-208,381	-5,236	51,252	40,422	-5,226	16,056	25,506	207,272	-113,386	-68,380
SSA model	Year	Sparkling.low-cost				Sparkling.entry level				Sparkling.middle range				Sparkling.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013-2012	39,579	4,696	1,602	33,282	-304,523	173,077	86,971	-564,571	1,299,505	780,548	606,751	-87,795	2,749,809	1,306,125	1,872,864	-429,180
	2014-2013	64,625	3,256	2,302	59,066	160,967	15,723	78,401	66,843	1,306,278	229,003	626,925	450,351	-1,194,462	417,227	-1,338,137	-273,552
	2015-2014	-115,178	-30,914	-6,637	-77,626	-385,805	-110,248	-142,042	-133,515	52,024	-1,337,546	1,798,244	-408,674	-4,588,985	-1,513,596	-2,439,829	-635,560
	2016-2015	4,901	153	-249	4,996	189,450	1,396	-8,277	196,331	-555,692	178,164	11,538	-745,394	48,844	43,281	-92,053	97,616
	2017-2016	-9,395	4,151	-1,185	-12,360	-190,998	101,747	-159,252	-133,494	493,395	2,063,865	-1,328,053	-242,417	1,488,218	582,545	939,259	-33,586
	2018-2017	2	0	-1	3	67,506	778	21,952	44,776	1,737,162	101,887	1,506,766	128,509	-1,057,354	55,355	-195,949	-916,760
	2019-2018	-5	1	-1	-6	-46,144	16,877	31,544	-94,565	-2,891,150	1,089,636	-1,709,007	-2,271,779	3,534,761	276,199	1,184,828	2,073,734
	2020-2019	10,373	0	-0	10,373	702,282	4,154	34,994	663,133	3,111,645	274,224	1,522,479	1,314,943	-4,259,737	361,080	-2,963,730	-1,657,086
	2016-2012	-6,074	-22,809	-2,983	19,719	-339,911	79,949	15,053	-434,913	2,102,114	-149,832	3,043,458	-791,512	-2,984,793	253,037	-1,997,154	-1,240,676
Static	2020-2016	975	4,152	-1,187	-1,990	532,646	123,557	-70,762	479,852	2,451,052	3,529,612	-7,815	-1,070,745	-294,112	1,275,178	-1,035,592	-533,698
	2020-2012	-5,099	-18,657	-4,170	17,728	192,735	203,505	-55,709	44,939	4,553,166	3,379,780	3,035,643	-1,862,256	-3,278,905	1,528,215	-3,032,746	-1,774,374
	2016-2012	-6,074	910	-286	-6,697	-339,911	33,546	-221,324	-152,134	2,102,114	151,289	2,732,485	-781,659	-2,984,793	253,158	-2,522,110	-715,842
	2020-2016	975	7,692	-5,518	-1,198	532,646	188,547	231,992	112,107	2,451,052	3,824,533	849,848	-2,223,328	-294,112	1,079,510	114,372	-1,487,994
2020-2012	-5,099	14,316	-9,971	-9,444	192,735	527,658	-17,262	-317,662	4,553,166	2,379,650	5,960,176	-3,786,659	-3,278,905	3,981,972	-4,409,282	-2,851,594	

Source: own elaboration of Customs data archive of Arsenal LLC[42].

‡ Indirectly calculated values.

Table D.5: *Tuscany SSA data by model by category, liters*

SSA model	Year	White.low-cost				White.entry level				White.middle range				White.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013–2012	-24,050	16,059	-11,795	-28,313	16,509	43,752	-4,640	-22,603	-6,378	26,952	-10,464	-22,866	-16,250	114,583	-79,150	-51,683
	2014–2013	470	1,708	-11,185	9,947	11,708	9,504	2,850	-646	-6,479	4,876	30,010	-41,365	116,813	21,373	28,347	67,093
	2015–2014	2,160	-7,579	9,800	-61	39,128	-44,532	33,243	50,416	45,278	-19,622	9,646	55,254	-274,053	-123,514	-44,693	-105,846
	2016–2015	-6,156	1,073	13,058	-20,287	-37,779	7,206	25,192	-70,176	-57,660	4,130	-21,052	-40,738	36,516	6,953	29,200	363
	2017–2016	-4,815	11,190	11,718	-27,723	120,434	76,714	440	43,281	73,049	28,072	-1,642	46,619	96,801	106,241	-31,908	22,468
	2018–2017	2,789	405	10,204	-7,821	-81,171	5,800	-24,497	-62,474	-38,658	2,694	11,012	-52,365	22,755	6,653	55,052	-38,949
	2019–2018	22,085	3,680	8,419	9,986	100,921	33,614	29,412	37,895	256,958	15,460	1,765	239,733	13,741	56,838	-40,442	-2,655
	2020–2019	-20,079	3,102	77,554	-100,735	120,086	21,448	-102,467	201,105	-185,654	24,249	-67,889	-142,013	-82,427	25,547	-48,802	-59,171
	2020–2012	-27,576	11,261	-123	-38,714	29,566	15,929	56,645	-43,009	-25,238	16,336	8,140	-49,715	-136,974	19,394	-66,296	-90,072
Static	2020–2016	-21	18,377	107,895	-126,293	260,270	137,576	-97,111	219,806	105,696	70,475	-56,754	91,974	50,870	195,278	-66,101	-78,308
	2020–2012	-27,597	29,637	107,773	-165,007	289,836	153,505	-40,466	176,797	80,458	86,812	-48,613	42,259	-86,104	214,672	-132,396	-168,380
	2016–2012	-27,576	3,113	3,822	-34,510	29,566	8,480	60,050	-38,965	-25,238	5,224	17,974	-48,436	-136,974	22,209	-41,285	-117,898
Dynamic	2013–2012	3,938	0	0	3,938 <sup>‡</sup>	3,946	2,130	5,036	-3,220	13,724	5,348	980	7,395	22,916	4,560	20,901	-2,546
	2014–2013	-3,938	233	-4,115	-56	-2,236	649	-3,984	1,100	6,744	1,854	5,178	-288	-15,518	2,244	-19,459	1,696
	2015–2014	0	0	0	0 <sup>‡</sup>	-5,486	-2,255	2,783	-6,013	-18,605	-9,839	-3,319	-5,446	-13,156	-5,793	-4,275	-3,088
	2016–2015	0	0	0	0 <sup>‡</sup>	-577	111	-58	-629	596	664	6,541	-6,609	3,767	316	455	2,997
	2017–2016	0	0	0	0 <sup>‡</sup>	-88	1,178	102	-1,367	305	8,867	-8,845	284	2,555	5,756	1,106	-4,307
	2018–2017	0	0	0	0 <sup>‡</sup>	-2,373	51	561	-2,985	-5,627	402	-1,128	-4,901	7,202	307	4,451	2,443
	2019–2018	3	0	0	3 <sup>‡</sup>	-199	33	74	-306	36,947	2,329	5,387	29,230	2,052	3,597	476	-2,021
	2020–2019	3	0	15	-12	675	1	0	674	-32,160	3,533	-10,088	-25,605	-6,691	1,698	-217	-8,172
	2016–2012	0	233	-4,115	3,882 <sup>‡</sup>	-4,352	634	3,776	-8,763	2,459	-1,974	9,380	-4,947	-1,991	1,328	-2,377	-942
	2020–2016	6	0	15	-9 <sup>‡</sup>	-1,985	1,262	737	-3,984	-536	15,130	-14,674	-992	5,118	11,358	5,816	-12,056
	2020–2012	6	233	-4,100	3,873 <sup>‡</sup>	-6,338	1,896	4,513	-12,747	1,924	13,156	-5,294	-5,939	3,127	12,686	3,439	-12,998
Static	2016–2012	0	0	0	0 <sup>‡</sup>	-4,352	413	3,203	-7,968	2,459	1,036	7,632	-6,209	-1,991	884	-2,709	-166
	2020–2016	6	0	0	6 <sup>‡</sup>	-1,985	2,183	3,371	-7,539	-536	16,431	-10,733	-6,233	5,118	10,667	8,733	-14,282
	2020–2012	6	0	0	6 <sup>‡</sup>	-6,338	6,495	19,263	-32,095	1,924	16,303	-175	-14,204	3,127	13,904	3,919	-14,696

Source: own elaboration of Customs data archive of Arsenal LLC[42].

<sup>‡</sup> Indirectly calculated values.

(Continued on next page)

Table D.5 continued.

SSA model	Year	Red.low-cost				Red.entry level				Red.middle range				Red.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013–2012	-132,421	67,993	-107,830	-92,585	75,054	826,403	-859,559	108,210	374,544	251,880	29,192	93,472	22,792	401,772	-283,075	-95,906
	2014–2013	-57,293	5,420	-35,042	-27,671	78,500	165,517	-163,505	76,488	163,184	71,248	176,950	-85,015	39,428	79,659	-12,232	-27,999
	2015–2014	-5,226	-8,873	3,189	458	-956,199	-743,134	357,778	-570,843	-427,605	-353,314	37,973	-112,264	-438,619	-358,078	-23,345	-57,196
	2016–2015	14,076	992	6,050	7,034	107,116	65,429	-11,769	53,456	-22,849	32,027	-69,314	14,438	108,561	32,280	95,756	-19,475
	2017–2016	-14,990	19,074	37,689	-71,753	937,511	895,331	374,526	-332,346	468,741	405,024	125,943	-62,226	299,627	466,326	49,016	-215,714
	2018–2017	-2,861	556	-3,424	8	-371,487	58,464	-349,639	-80,312	-86,088	27,328	-191,845	78,429	-86,710	26,731	-72,000	-41,441
	2019–2018	27,928	4,000	12,633	11,294	302,447	409,320	-398,791	291,918	46,708	205,144	-25,046	-133,389	4,144	200,268	-135,637	-60,486
	2020–2019	110,098	3,640	49,643	56,815	68,045	197,876	-664,235	534,403	-113,451	92,007	-152,113	-53,345	-94,791	86,988	-90,508	-91,271
	2020–2012	-60,688	92,804	-37,092	-116,400	240,987	1,875,205	-1,715,193	80,975	403,185	731,344	-68,260	-259,900	-145,569	935,946	-472,026	-609,489
Static	2016–2012	-180,863	65,533	-133,632	-112,764	-695,529	314,215	-677,054	-332,689	87,273	1,842	174,800	-89,369	-267,838	155,634	-222,896	-200,577
	2020–2016	120,176	27,271	96,541	-3,636	936,516	1,560,991	-1,038,139	413,664	315,911	729,502	-243,061	-170,531	122,270	780,312	-249,130	-408,913
	2020–2012	-60,688	92,804	-37,092	-116,400	240,987	1,875,205	-1,715,193	80,975	403,185	731,344	-68,260	-259,900	-145,569	935,946	-472,026	-609,489
Static	2016–2012	-180,863	13,179	-108,034	-86,008	-695,529	160,177	-486,866	-368,840	87,273	48,820	111,346	-72,893	-267,838	77,873	-155,414	-190,298
	2020–2016	120,176	35,346	218,915	-134,086	936,516	1,659,131	-1,181,806	459,191	315,911	750,547	-279,514	-155,122	122,270	864,145	-328,329	-413,546
	2020–2012	-60,688	207,291	458,329	-726,308	240,987	2,519,449	-2,281,990	3,529	403,185	767,905	-99,275	-265,445	-145,569	1,224,880	-670,062	-700,387

SSA model	Year	Sparkling.low-cost				Sparkling.entry level				Sparkling.middle range				Sparkling.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013–2012	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
	2014–2013	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	38	0	0	38 <sup>‡</sup>
	2015–2014	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	1,854	-10	-16	1,879
	2016–2015	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	-1,892	64	-137	-1,819
	2017–2016	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
	2018–2017	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	363	0	0	363 <sup>‡</sup>
	2019–2018	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	-246	57	246	-549
	2020–2019	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	756	0	0	756 <sup>‡</sup>	1,553	8	-66	1,610
	2016–2012	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	55	-153	98 <sup>‡</sup>
	2020–2016	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	756	0	0	756 <sup>‡</sup>	1,670	65	180	1,424 <sup>‡</sup>
2020–2012	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	756	0	0	756 <sup>‡</sup>	1,670	120	27	1,522 <sup>‡</sup>	
Static	2016–2012	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>
	2020–2016	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	756	0	0	756 <sup>‡</sup>	1,670	0	0	1,670 <sup>‡</sup>
	2020–2012	0	0	0	0 <sup>‡</sup>	0	0	0	0 <sup>‡</sup>	756	0	0	756 <sup>‡</sup>	1,670	0	0	1,670 <sup>‡</sup>

Source: own elaboration of Customs data archive of Arsenal LLC[42].

<sup>‡</sup> Indirectly calculated values.



Table D.6: *Veneto* SSA data by model by category, liters

SSA model	Year	White.low-cost				White.entry level				White.middle range				White.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013–2012	126,192	125,753	-92,363	92,802	732,229	743,753	-78,878	67,354	110,892	155,793	-60,483	15,582	10,327	49,773	-34,382	-5,064
	2014–2013	-213,087	31,975	-209,445	-35,617	164,430	188,278	56,459	-80,306	274,873	36,925	227,260	10,688	20,002	10,312	13,678	-3,988
	2015–2014	-139,141	-84,600	109,392	-163,933	-418,436	-864,734	645,526	-199,229	-343,236	-232,266	114,179	-225,148	-47,195	-50,204	-18,166	21,174
	2016–2015	64,133	6,417	78,083	-20,367	628,097	99,784	348,853	179,460	11,246	18,938	-96,532	88,839	32,396	5,013	21,053	6,330
	2017–2016	249,534	111,487	116,745	21,302	1,581,483	1,570,651	9,009	1,823	286,258	250,425	-14,648	50,481	84,329	79,278	-23,810	28,861
	2018–2017	180,225	9,898	249,548	-79,222	-525,772	101,316	-427,917	-199,171	91,540	16,826	68,788	5,926	80,889	5,203	43,054	32,632
	2019–2018	298,248	107,665	246,327	-55,744	1,360,319	727,959	636,961	-4,601	22,459	149,123	17,027	-143,690	3,418	54,407	-38,712	-12,277
	2020–2019	3,003,739	66,990	1,674,867	1,261,882	-1,109,349	408,105	-1,949,692	432,239	-21,307	66,096	-185,046	97,643	41,125	23,789	-45,444	62,781
	2016–2012	-161,903	79,545	-114,333	-127,115	1,106,320	167,081	971,960	-32,721	53,775	-20,610	184,424	-110,039	15,530	14,895	-17,817	18,452
Static	2020–2016	3,731,745	296,040	2,287,487	1,148,218	1,306,681	2,808,032	-1,731,640	230,289	378,950	482,470	-113,879	10,359	209,761	162,676	-64,913	111,998
	2020–2012	3,569,842	375,585	2,173,154	1,021,104	2,413,001	2,975,113	-759,680	197,568	432,724	461,860	70,544	-99,680	225,290	177,571	-82,730	130,450
	2016–2012	-161,903	24,374	29,927	-216,204	1,106,320	144,157	1,020,823	-58,661	53,775	30,196	103,899	-80,320	15,530	9,647	-17,933	23,816
	2020–2016	3,731,745	206,595	2,615,867	909,283	1,306,681	2,910,562	-1,842,855	238,974	378,950	464,061	-120,122	35,011	209,761	146,909	-53,885	116,737
2020–2012	3,569,842	383,381	4,910,135	-1,723,674	2,413,001	2,267,474	-17,179	162,706	432,724	474,965	51,775	-94,016	225,290	151,743	-79,345	152,891	

SSA model	Year	Rosé.low-cost				Rosé.entry level				Rosé.middle range				Rosé.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013–2012	-101,987	48,939	-146,372	-4,554	32,472	28,929	68,388	-64,844	27,151	11,557	2,119	13,474	24,710	2,463	11,286	10,961
	2014–2013	-58,565	3,507	-61,953	-118	11,086	7,559	-46,437	49,964	21,866	3,859	10,776	7,231	-12,017	1,942	-16,833	2,875
	2015–2014	-225	-186	2,930	-2,969	19,955	-35,877	44,276	11,556	-33,260	-22,500	-7,590	-3,170	-4,505	-5,375	-3,966	4,836
	2016–2015	495	17	453	25	-54,710	5,411	-2,859	-57,262	38,200	1,834	18,075	18,291	-4,702	555	800	-6,057
	2017–2016	-333	437	-1,143	373	75,934	45,978	3,966	25,990	9,341	40,639	-40,542	9,243	13,604	5,122	984	7,497
	2018–2017	-657	13	16,447	-17,117	64,456	3,550	39,139	21,767	-10,862	1,999	-5,610	-7,251	197	497	7,195	-7,495
	2019–2018	9,951	0	0	9,951 <sup>‡</sup>	236,804	38,587	87,651	110,565	12,834	14,285	33,040	-34,490	-250	4,008	530	-4,788
	2020–2019	485,899	680	49,154	436,065	126,671	32,885	20,251	73,535	-12,300	7,061	-20,164	803	7,736	1,718	-219	6,237
	2016–2012	-160,282	52,276	-204,942	-7,616	8,803	6,022	63,368	-60,587	53,956	-5,250	23,380	35,825	3,486	-416	-8,713	12,615
Static	2020–2016	494,860	1,130	64,458	429,272 <sup>‡</sup>	503,864	121,001	151,007	231,856	-988	63,984	-33,277	-31,695	21,286	11,346	8,489	1,451
	2020–2012	334,578	53,406	-140,484	421,655 <sup>‡</sup>	512,666	127,023	214,374	171,269	52,968	58,735	-9,897	4,130	24,772	10,930	-224	14,065
	2016–2012	-160,282	9,486	-162,289	-7,478	8,803	5,607	43,495	-40,300	53,956	2,240	16,494	35,222	3,486	477	-1,463	4,471
	2020–2016	494,860	810	75,453	418,597	503,864	85,202	131,577	287,084	-988	75,309	-49,193	-27,103	21,286	9,492	7,771	4,023
2020–2012	334,578	149,200	350,316	-164,938	512,666	88,194	261,581	162,891	52,968	35,235	-379	18,112	24,772	7,508	2,116	15,148	

Source: own elaboration of Customs data archive of Arsenal LLC[42].

<sup>‡</sup> Indirectly calculated values.

(Continued on next page)

Table D.6 continued.

SSA model	Year	Red.low-cost				Red.entry level				Red.middle range				Red.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013–2012	-35,213	189,516	-300,550	75,821	-318,400	459,626	-478,067	-299,960	133,814	107,277	12,433	14,104	85,478	130,619	-92,030	46,888
	2014–2013	-238,090	34,857	-225,340	-47,607	-58,996	70,755	-69,895	-59,856	93,584	28,825	71,587	-6,828	-2,309	30,515	-4,686	-28,138
	2015–2014	-133,957	-90,726	32,609	-75,840	-209,086	-293,766	141,432	-56,752	-210,956	-150,058	16,128	-77,026	-61,721	-132,672	-8,650	79,601
	2016–2015	-112,823	7,401	45,133	-165,357	-73,979	31,618	-5,687	-99,910	-974	12,603	-27,275	13,698	113,119	15,394	45,664	52,061
	2017–2016	202,444	46,115	91,120	65,208	283,958	377,148	157,765	-250,955	128,636	162,919	50,660	-84,942	329,090	249,469	26,222	53,398
	2018–2017	-138,062	6,051	-37,252	-106,861	-196,395	22,440	-134,198	-84,636	-78,316	9,811	-68,876	-19,252	-19,853	17,628	-47,482	10,001
	2019–2018	62,552	26,642	84,136	-48,225	48,812	148,613	-144,790	44,989	58,063	66,169	-8,079	-27	104,611	137,962	-93,439	60,088
	2020–2019	-44,620	15,808	215,590	-276,018	-142,870	67,676	-227,177	16,631	-49,724	32,614	-53,921	-28,418	136,343	66,877	-69,584	139,049
	2016–2012	-520,082	141,048	-448,148	-212,983	-660,460	268,233	-412,217	-516,477	15,467	-1,355	72,873	-56,051	134,567	43,856	-59,701	150,412
Static	2020–2016	82,314	94,616	353,594	-365,896	-6,495	615,877	-348,400	-273,972	58,658	271,513	-80,215	-132,640	550,190	471,936	-184,282	262,536
	2020–2012	-437,768	235,664	-94,554	-578,879	-666,955	884,110	-760,617	-790,449	74,125	270,158	-7,343	-188,690	684,757	515,792	-243,983	412,948
	2016–2012	-520,082	36,733	-301,121	-255,694	-660,460	89,087	-270,784	-478,763	15,467	20,793	47,423	-52,748	134,567	25,317	-50,526	159,777
	2020–2016	82,314	85,456	529,266	-532,408	-6,495	698,890	-497,822	-207,563	58,658	301,903	-112,433	-130,812	550,190	462,290	-175,646	263,546
	2020–2012	-437,768	577,777	1,277,490	-2,293,035	-666,955	1,401,259	-1,269,190	-799,024	74,125	327,053	-42,282	-210,646	684,757	398,218	-217,842	504,382

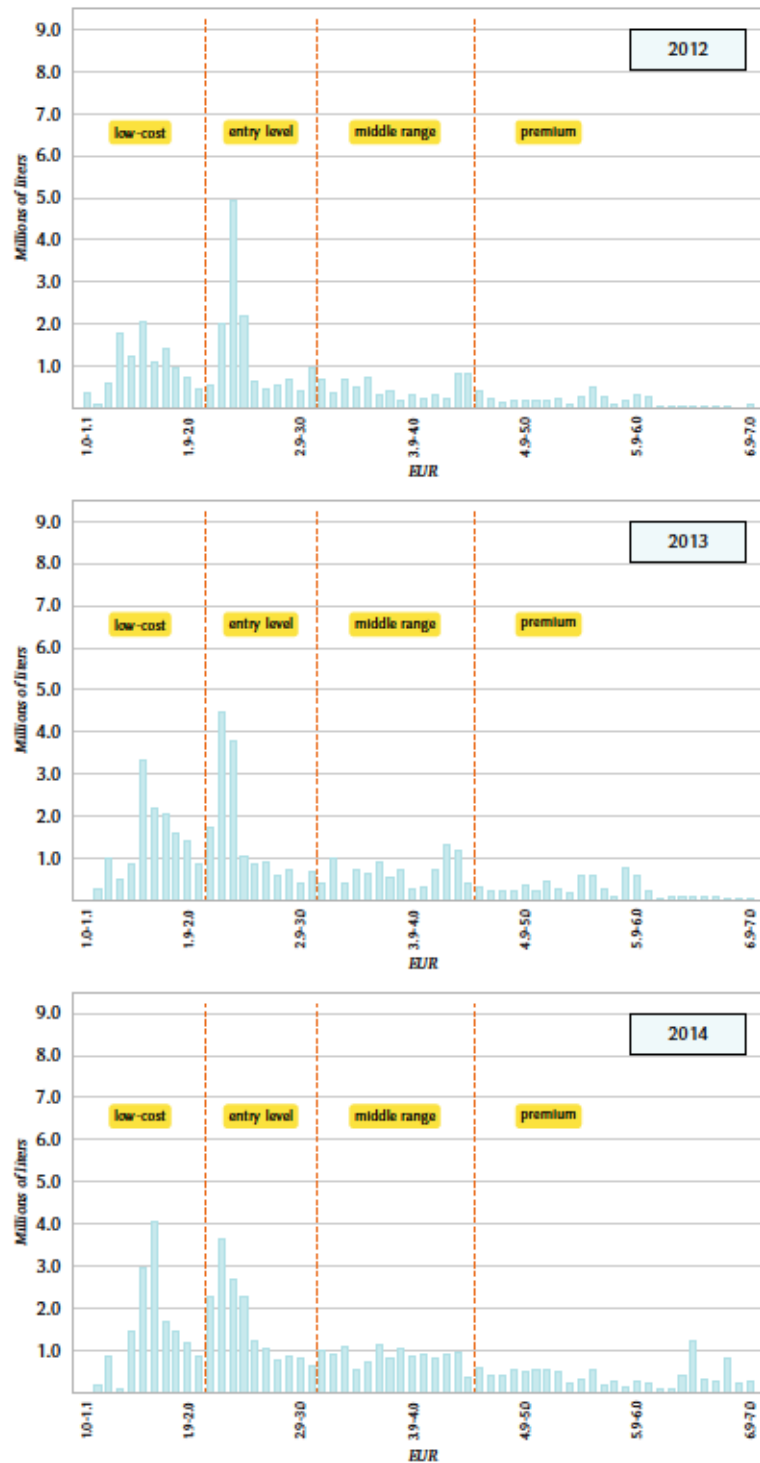
SSA model	Year	Sparkling.low-cost				Sparkling.entry level				Sparkling.middle range				Sparkling.premium			
		EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS	EC	NS	IM	RS
Dynamic	2013–2012	7,290	1,502	512	5,276	18,005	30,467	15,310	-27,772	684,009	354,514	275,578	53,916	195,840	222,513	319,063	-345,736
	2014–2013	-4,540	724	512	-5,776	395,686	7,003	34,921	353,761	-43,386	109,558	299,928	-452,871	-247,638	54,954	-176,251	-126,342
	2015–2014	57,171	-1,989	-427	59,587	-54,103	-132,797	-171,095	249,789	-39,881	-467,260	628,200	-200,821	-111,800	-176,032	-283,753	347,985
	2016–2015	-32,632	2,210	-3,592	-31,249	-211,606	15,670	-92,884	-134,391	1,268,452	60,262	3,903	1,204,287	401,696	19,406	-41,274	423,563
	2017–2016	-3,782	14,235	-4,064	-13,952	-79,950	109,669	-171,650	-17,969	609,672	1,341,137	-862,993	131,527	1,168,947	428,888	691,512	48,547
	2018–2017	-13,649	561	-2,841	-11,369	-24,932	3,321	93,741	-121,994	711,538	71,907	1,063,405	-423,774	832,359	42,199	-149,378	939,538
	2019–2018	-758	2,337	-1,835	-1,259	329,231	22,645	42,324	264,261	1,516,832	687,827	-1,078,802	1,907,806	435,725	469,108	2,012,361	-2,045,743
	2020–2019	-999	960	-1,183	-776	890,357	32,298	272,065	585,995	2,107,785	401,424	2,228,687	-522,326	-97,434	232,867	-1,911,365	1,581,064
	2016–2012	27,289	2,447	-2,995	27,837	147,982	-79,657	-213,748	441,387	1,869,194	57,074	1,207,609	604,511	238,098	120,841	-182,214	299,470
Static	2020–2016	-19,187	18,092	-9,924	-27,355	1,114,706	167,932	236,480	710,293	4,945,826	2,502,295	1,350,297	1,093,234	2,339,597	1,173,062	643,130	523,405
	2020–2012	8,102	20,539	-12,919	482	1,262,687	88,276	22,731	1,151,680	6,815,021	2,559,370	2,557,906	1,697,745	2,577,694	1,293,903	460,916	822,875
	2016–2012	27,289	291	-92	27,089	147,982	5,905	-38,960	181,036	1,869,194	68,713	1,241,058	559,423	238,098	43,128	-429,670	624,639
	2020–2016	-19,187	26,378	-18,925	-26,640	1,114,706	203,226	250,053	661,426	4,945,826	2,485,251	552,246	1,908,329	2,339,597	794,770	84,204	1,460,623
	2020–2012	8,102	4,579	-3,189	6,712	1,262,687	92,884	-3,039	1,172,842	6,815,021	1,080,805	2,707,032	3,027,183	2,577,694	678,374	-751,171	2,650,491

Source: own elaboration of Customs data archive of Arsenal LLC[42]

# Appendix E

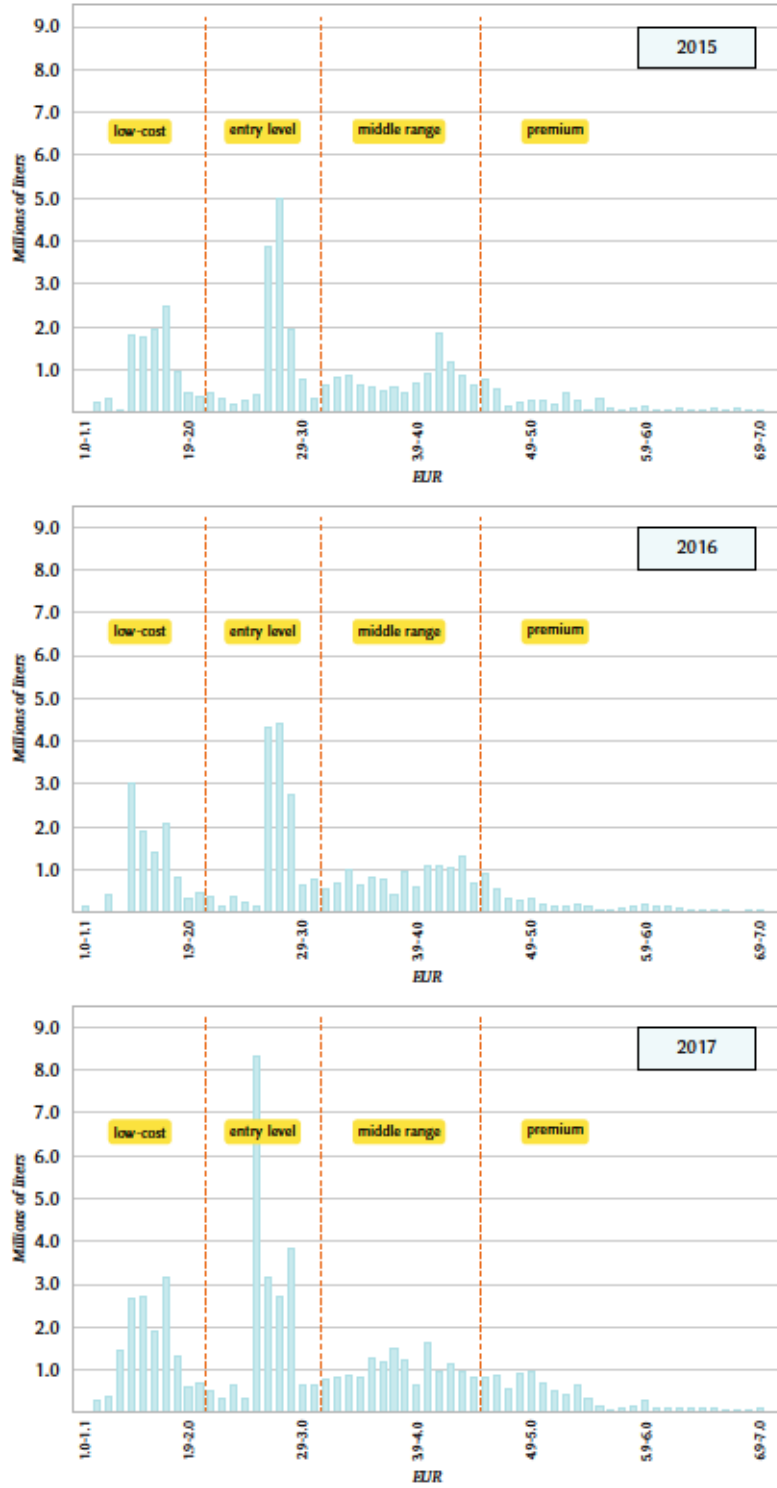
## Price segmentation charts

Figure E.1: Imports volume distribution by price segment and by year, mln liters



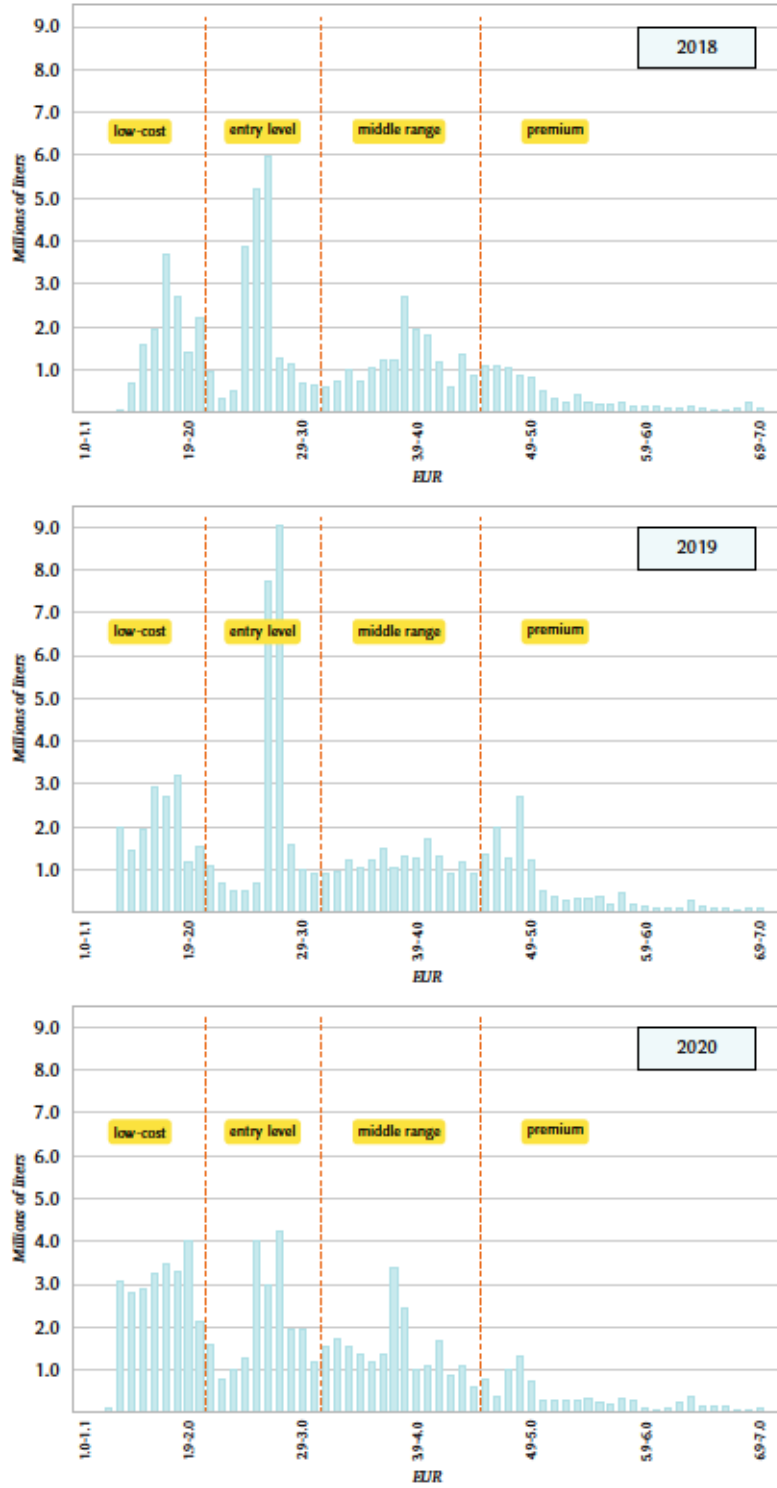
Data source: Customs data archive of Arsenal LLC[42]

Figure E.1 continued.



Data source: Customs data archive of Arsenal LLC[42]

Figure E.1 continued.



Data source: Customs data archive of Arsenal LLC[42]

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