

How did COVID-19 affected Wine Sales? France vs Italy

During the pandemic, many countries entered into lockdown, or adopted restrictive measures, such as the closure of clubs, bars and restaurants, in order to reduce the spread of the Coronavirus. If people have no longer been able to access these places, certainly the consumption of wine has drastically decreased. The question is: has the consumer really reduced the consumption of wine or has he just found another channel to buy the bottles?

This research aims to understand how the pandemic has affected European bottled wine sales around the world, focusing on a comparison between France and Italy. To get a complete picture of what happened, it was necessary to compare the data from the pandemic with the antecedent and subsequent periods.

Data Acquisition

The data was downloaded from the official website of the European Commission:

<https://agridata.ec.europa.eu/extensions/DashboardWine/WineTrade.html>

The website is a rich database that contains a lot of data on agriculture.

As for wine, the database collects all Sales in hectoliters (only the quantity and not taking into account the value of the bottles themselves), the Values in thousands euro and the Average Unit Price in euro per hectoliter. The database can be further broken down and filtered by:

- Product Category
- Product Group
- Member State
- Partner
- Marketing Year

Here is a the screenshot of how the database looked like:

The screenshot shows the 'Wine trade' interface from the European Commission. It includes filters for EU Composition (EU), Flow (EXPORT), Measure (Volume), and View (Monthly). Below these are tabs for Product Category, Product Group, Member State, Partner, and Marketing Year. The main content area displays 'Monthly EU Trade, Quantity in hectoliters' with a table view selected. The table has columns for Product Category, Product Group, Member State, Partner, and Month. The data is organized into a hierarchical structure with expandable sections for Total Product Categories, Total Product Groups, Total Member States, and Total Partners.

				Month				
				Total 2021/2022	Aug	Sep	Oct	
Total Product Categories				7 366 495	1 062 698	1 218 094	1 286 945	
● PDO Wines	Total Product Groups			5 247 363	751 112	861 602	934 078	
	● Still wines bottled			5 247 363	751 112	861 602	934 078	
		Total Member States		2 182 441	314 949	348 547	364 235	
		● Italy	Total Partners	917 661	138 893	137 447	144 734	
			United States of America	430 129	76 964	81 975	83 076	
			United Kingdom	230 390	28 670	38 549	40 749	
			Canada	46 632	5 580	5 864	8 229	
			China	71 621	10 383	9 282	8 010	
			Japan	145 568	13 398	24 211	21 493	
			Switzerland	62 721	8 101	11 438	10 730	
			Russia	34 331	5 853	5 137	5 396	
			Australia	15 987	1 440	2 150	3 700	
			Mexico	20 648	2 113	3 326	2 604	
			Korea (Republic of)	51 175	4 784	7 958	10 415	
			Norway	22 477	3 192	3 723	4 293	
			Brazil	27 439	4 355	3 647	3 813	
			Ukraine	6 045	1 032	688	874	
			Hong Kong	6 629	757	852	1 556	
			Taiwan	14 613	376	759	1 370	
			Israel	4 757	851	433	466	
			United Arab Emirates					

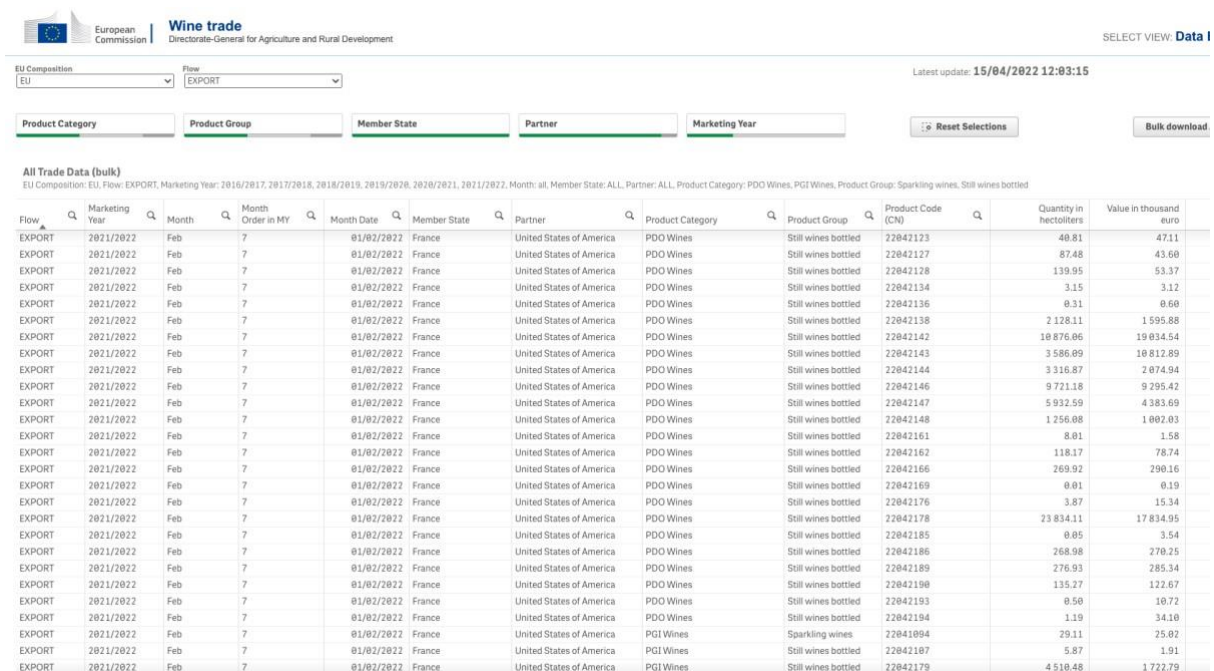
During the preprocessing of the data I realized that the data was not actually arranged in an optimal way and that the page was unclear as for example:

- All units of measurement were missing
- The dates were in a format that required a double VLOOKUP or a TRANSPOSE and INDEX.
- The categories appeared only once the "+" was clicked and remained imprinted only in the first cell.

To ask for these clarifications I wrote to the e-mail:

✉ agri-ext-helpdesk@ec.europa.eu

They replied pretty quickly with the extra explanations and after a couple of weeks I realized that they corrected those same misunderstandings on their official website. Currently the database view looks like this:



The screenshot shows the 'Wine trade' database interface from the European Commission. It includes filters for EU Composition (EU), Flow (EXPORT), and various product and partner categories. The table displays 'All Trade Data (bulk)' for the period 2016/2017 to 2021/2022. The data is organized by Marketing Year, Month, and Month Order in MY. The table includes columns for Flow, Marketing Year, Month, Month Order in MY, Month Date, Member State, Partner, Product Category, Product Group, Product Code (CN), Quantity in hectoliters, and Value in thousand euro.

Flow	Marketing Year	Month	Month Order in MY	Month Date	Member State	Partner	Product Category	Product Group	Product Code (CN)	Quantity in hectoliters	Value in thousand euro
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042123	40.81	47.11
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042127	87.48	43.60
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042128	139.95	53.37
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042134	3.15	3.12
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042136	0.31	0.60
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042138	2 128.11	1 595.88
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042142	10 876.06	19 834.54
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042143	3 586.09	10 812.89
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042144	3 316.87	2 074.94
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042146	9 721.18	9 295.42
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042147	5 932.59	4 383.69
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042148	1 256.08	1 062.03
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042161	8.01	1.58
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042162	118.17	78.74
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042166	269.92	290.16
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042169	0.01	0.19
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042176	3.87	15.34
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042178	23 834.11	17 834.95
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042185	0.05	3.54
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042186	268.98	270.25
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042189	276.93	285.34
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042190	135.27	122.67
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042193	0.50	10.72
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PDO Wines	Still wines bottled	22042194	1.19	34.10
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PGI Wines	Sparkling wines	22041094	29.11	25.02
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PGI Wines	Still wines bottled	22042107	5.87	1.91
EXPORT	2021/2022	Feb	7	01/02/2022	France	United States of America	PGI Wines	Still wines bottled	22042179	4 510.48	1 722.79

Much clearer, easier to process and quicker to do analyzes.

Preparation

First of all I have identified and deleted the columns that are not essential for my analysis, such as “Flow”, “Month order in MY” and “Product Code”

The first problem that came up during data preprocessing was the year. The Marketing Year does not start from January and terminates in December but it corresponds to the vintage of the wine. This means that the first month corresponds to the earliest harvests, that is August and ends in July of the following Year.

To solve this problem, I created two new columns, "YearA" and “YearB”, and I entered the formula “=LEFT(cell, 4)” in the first column to get the first 4 numbers starting from the left and “=RIGHT(cell, 4)” to get the last 4 numbers starting from the right in order to make up the two years of a vintage. Then, I quickly marked with a “x” all the cells from August to December using a SORT by “Month” and with the formula

=IF(cell="x", CONCAT("cellMonth", " ", "YearA"), CONCAT("cellMonth", " ", "YearB"))
 I concatenate YearA for those months with "x" (between August and December) and with YearB the others without "x" (between January and July). This way I got the "Actual year".

After this process I had to transpose the monthly data from columns to rows.

Total 2021/2022	Aug	Sep	Oct	Nov	Dec	Jan	Feb
8 444 288	1 229 674	1 415 172	1 488 732	1 361 854	1 137 303	976 743	834 809
6 428 496	933 772	1 076 683	1 148 196	1 036 801	865 115	743 437	624 494
4 097 211	604 113	670 776	721 645	634 720	542 656	490 857	432 443
2 182 441	314 949	348 547	364 235	349 104	309 466	268 202	227 937
917 661	138 893	137 447	144 734	138 007	133 413	113 345	111 822
430 129	76 964	81 975	83 076	82 871	56 800	48 444	-
230 390	28 670	38 549	40 749	29 917	28 636	32 844	31 024
145 568	13 398	24 211	21 493	27 110	23 594	16 016	19 745
71 621	10 383	9 282	8 010	6 979	10 525	11 774	14 668
46 632	5 580	5 864	8 229	7 956	6 869	5 548	6 586
62 721	8 101	11 438	10 730	12 510	6 475	6 479	6 988
34 331	5 853	5 137	5 396	4 381	5 922	4 023	3 621
20 648	2 113	3 326	2 604	2 748	3 640	2 111	4 105
51 175	4 784	7 958	10 415	11 339	6 163	4 749	5 767
27 439	4 355	3 647	3 813	6 377	4 592	2 125	2 530
15 987	1 440	2 150	3 700	1 843	1 960	1 620	3 274
22 477	3 192	3 723	4 293	2 072	3 075	4 498	1 625
4 061	411	380	1 474	533	542	297	426
6 045	1 032	688	874	955	1 413	485	598
4 757	851	433	466	630	749	528	1 099
6 629	757	852	1 556	906	951	544	1 063
14 613	376	759	1 370	2 016	4 411	4 276	1 405
2 860	535	573	773	338	313	196	133

Initially I thought about using the Copy and "Transpose" command but in the end it was more useful to go to the bottom of the spreadsheet, create space for other 11 months for each row, resort the dataset for Partner, Member state, Product Group and Product category and finally use a VLOOKUP inside another VLOOKUP to allocate the data to each row.

This is the final output:

1	Product Category	Product Group	Member State	Partner	Vintage	Actual Year	Month	Date	Monthly Sales	Total
648	Other Wines	Sparkling wines	France	United Arab Emirates	2016/2017	2016	September	September 2016	69,38	1344,37
649	Other Wines	Sparkling wines	France	United Arab Emirates	2016/2017	2016	October	October 2016	162,94	1344,37
650	Other Wines	Sparkling wines	France	United Arab Emirates	2016/2017	2016	November	November 2016	127,96	1344,37
651	Other Wines	Sparkling wines	France	United Arab Emirates	2016/2017	2016	December	December 2016	233,1	1344,37
652	Other Wines	Sparkling wines	France	United Arab Emirates	2016/2017	2017	January	January 2017	36,47	1344,37
653	Other Wines	Sparkling wines	France	United Arab Emirates	2016/2017	2017	February	February 2017	68,83	1344,37
654	Other Wines	Sparkling wines	France	United Arab Emirates	2016/2017	2017	March	March 2017	134,33	1344,37
655	Other Wines	Sparkling wines	France	United Arab Emirates	2016/2017	2017	April	April 2017	50,67	1344,37
656	Other Wines	Sparkling wines	France	United Arab Emirates	2016/2017	2017	May	May 2017	19,89	1344,37
657	Other Wines	Sparkling wines	France	United Arab Emirates	2016/2017	2017	June	June 2017	120,2	1344,37
658	Other Wines	Sparkling wines	France	United Arab Emirates	2016/2017	2017	July	July 2017	210,6	1344,37
659	Other Wines	Sparkling wines	France	United States of America	2016/2017	2016	August	August 2016	4056,62	76375,74
660	Other Wines	Sparkling wines	France	United States of America	2016/2017	2016	September	September 2016	7629,85	76375,74
661	Other Wines	Sparkling wines	France	United States of America	2016/2017	2016	October	October 2016	7240,4	76375,74
662	Other Wines	Sparkling wines	France	United States of America	2016/2017	2016	November	November 2016	5945,51	76375,74
663	Other Wines	Sparkling wines	France	United States of America	2016/2017	2016	December	December 2016	5732,27	76375,74
664	Other Wines	Sparkling wines	France	United States of America	2016/2017	2017	January	January 2017	5723,04	76375,74
665	Other Wines	Sparkling wines	France	United States of America	2016/2017	2017	February	February 2017	4617,09	76375,74
666	Other Wines	Sparkling wines	France	United States of America	2016/2017	2017	March	March 2017	7199,67	76375,74
667	Other Wines	Sparkling wines	France	United States of America	2016/2017	2017	April	April 2017	7365,1	76375,74

The Dataset is now clean, tidy and ready to be processed by Tableau.

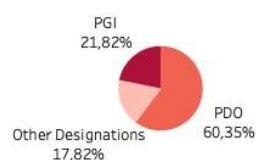
Exploratory Data Analysis and Visualizations

Before answering the question "How did COVID-19 affected Wine Sales?" it is necessary to understand how the bottled wine market is segmented. How much table wine is sold by the bottle? What percentage of wine has a denomination? What are the most common denominations? In what percentage is the wine sparkling or still?

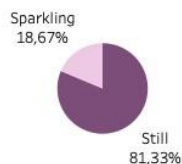
European Production Insights

This dashboard provides us with important information about bottled wine exports from all European countries.

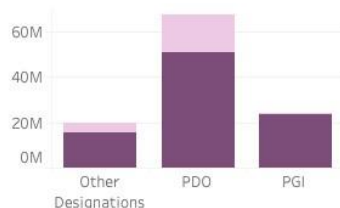
Wine Designation



Wine Typologies



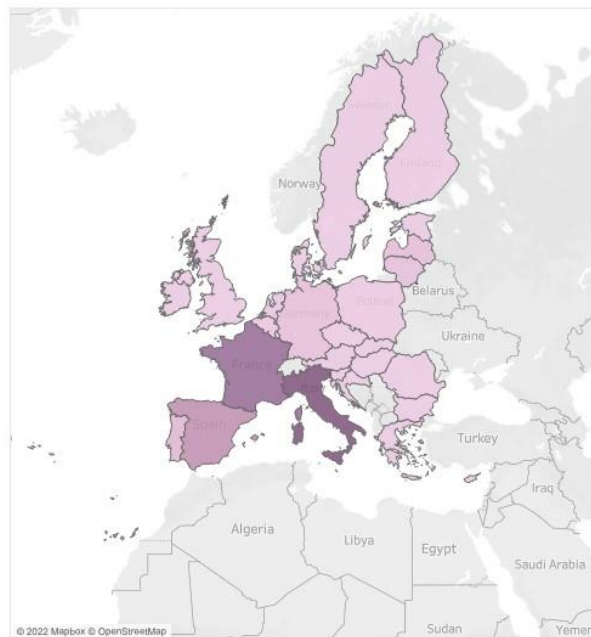
Wine Designation broken down by Tipology



PGI: Protected Geographical Indication
PDO: Protected Designation of Origin

Major European wine exporting nations (volume)

Hectoliters of wine produced and exported by EU Nations outside the EU (2016-2022)
Italy, France and Spain are the largest European exporters of wine outside of Europe in the last 6 years.



Legend

Memb..	Volume
Italy	39,930,700
France	31,391,857
Spain	18,428,321
Portugal	6,039,617
Latvia	4,207,434
Germany	3,677,510
Lithuania	3,195,123
Netherlands	1,349,931
Belgium	1,114,777
Poland	534,786
Austria	462,054
United King..	284,489
Greece	275,039
Bulgaria	198,179
Hungary	195,437
Croatia	124,915
Slovenia	85,558
Romania	73,885
Estonia	70,593
Denmark	58,213
Sweden	43,430
Luxembourg	18,099
Czechia	11,709
Finland	10,964
Slovakia	9,659
Cyprus	5,085
Ireland	2,917
Malta	19

In the Dashboard, in the Pie Charts, we can see that more than 60% of the wine sold outside of Europe is PDO (Protected Designation of Origin), almost 22% is PGI (Protected Geographical Indication). Almost 18% have no denominations or have less prestigious denominations.

More than 81% of the wine is still and the remainder is sparkling.

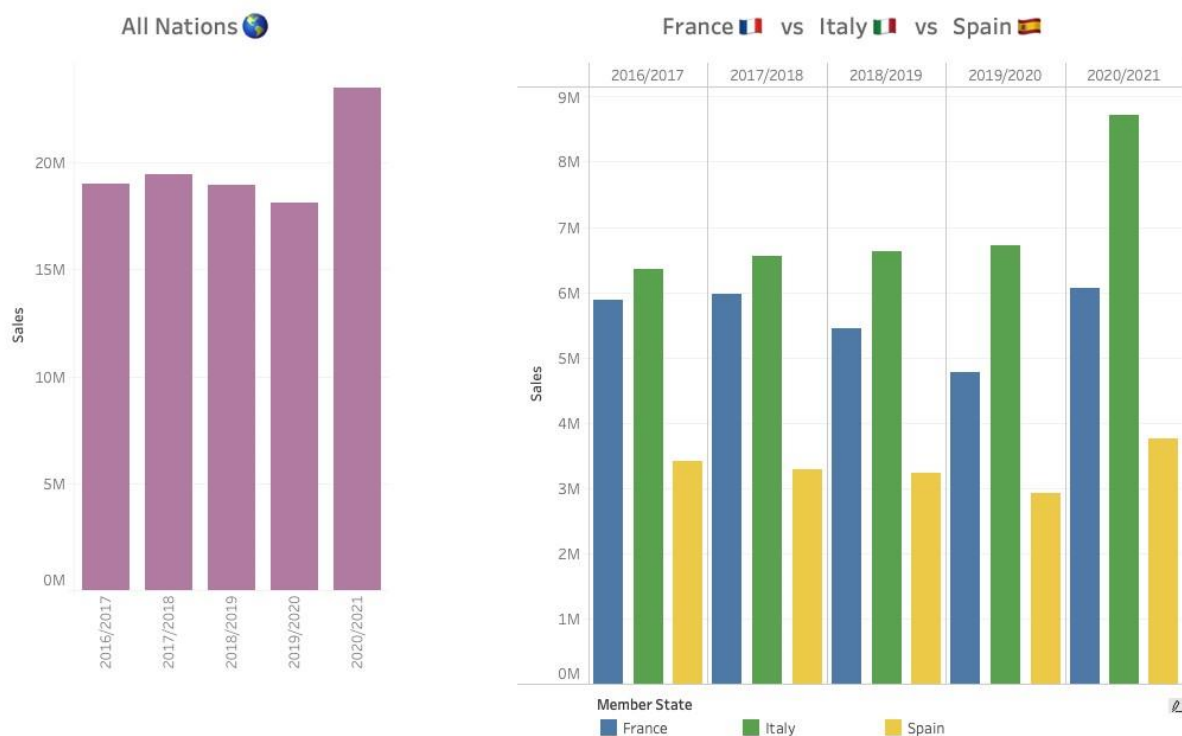
In the histogram we can see how Sparkling and Still wine are combined in the various denominations.

The second step was to identify which were the largest European wine exporting nations. As we can see from the map, during the last 6 years (2016-2021) Italy, France and Spain are the largest European exporters of bottled wine outside of Europe.

What impact has the pandemic had on bottled wine sales?

Behavior of exports by Vintage

What effect has COVID-19 had on the sale of bottled wine?



The graph shows that during 2020 there was a general decline in wine exports.

The reasons could be many: nations adopt restrictive measures (closures of clubs, bars and restaurants), in the lockdown there are fewer opportunities to drink, some companies may have gone bankrupt, in a period of crisis where many people have lost their jobs or perhaps prefer to save money and do not drink bottled wine (please remember that we are dealing with bottled wine, an almost luxury good and not a basic food item).

However, if we look at the graph alongside, where we have a focus on the top three exporting nations, we can see that Italy is the only country to have increased its export volume during the pandemic.

This fact is very surprising and it is worth further investigating.

So let's focus on these two nations that have always been rivals, where perhaps France holds the first place in wine.

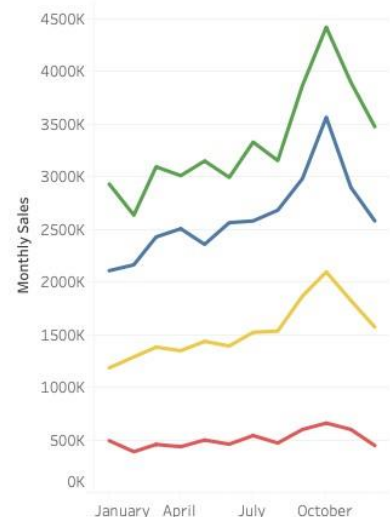
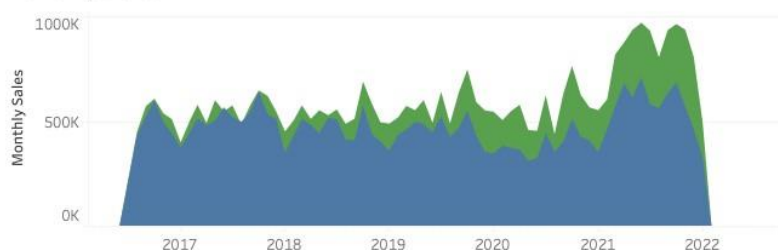
We note that first of all the European trend is in line with that of France and Italy. As we could expect, peaks occur every year around October (peak due to Christmas, as shipments arrive at least a few months earlier).

Wine VOLUME: France 🇫🇷 vs Italy 🇮🇹

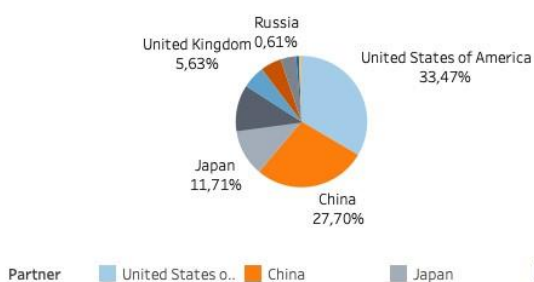
Overall sales per month 🌐



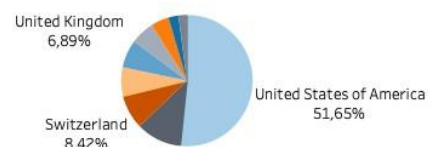
Monthly Sales



Top Exports Countries for France 🇫🇷



Top Exports Countries for Italy 🇮🇹

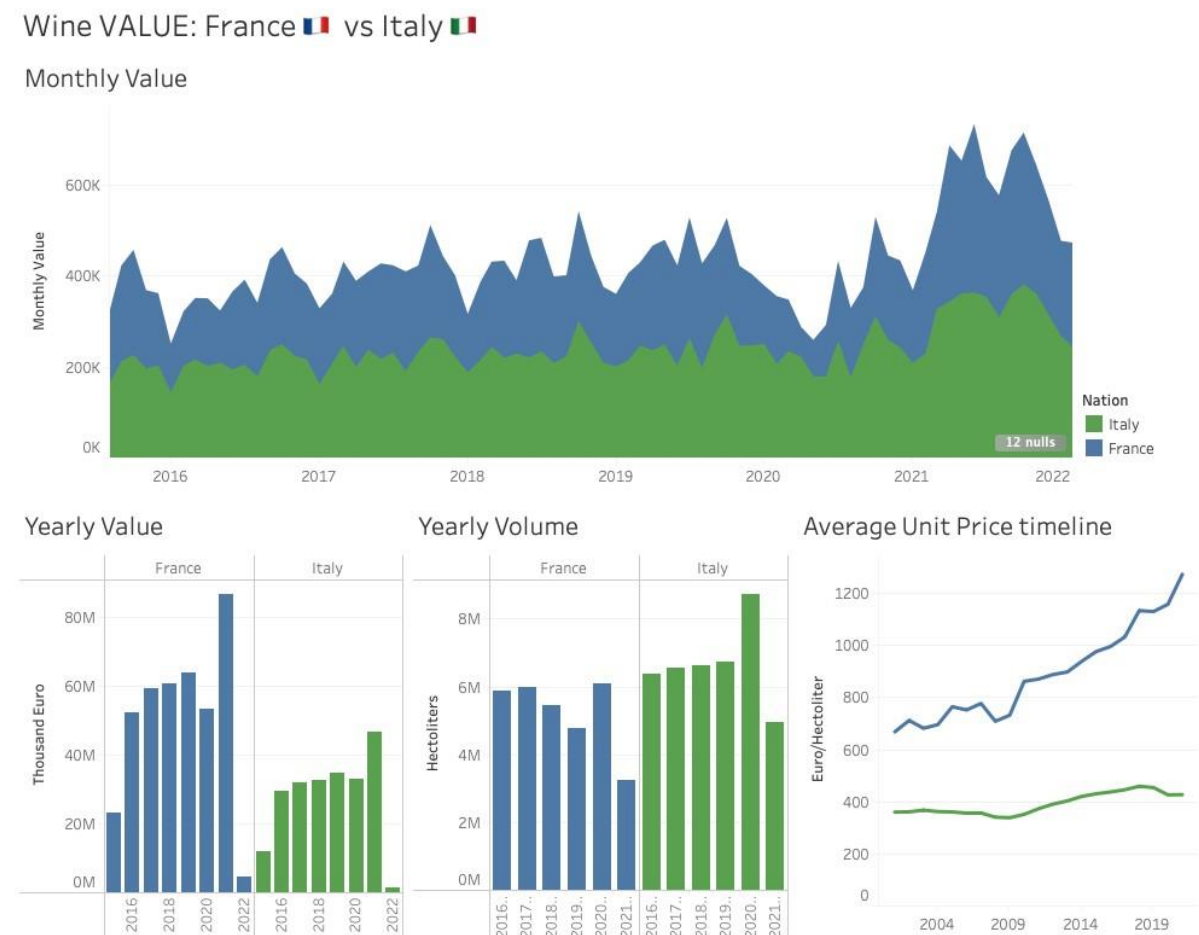


But the real surprising news comes by observing the two Pie Charts that show us how sales are allocated in percentage terms in the various countries of the world.

Over 50% of Italian wine bottles sold outside the European Union are destined for the United States! While France only sells its 33% to United States, but at the same time it sells

more wine to China and Japan than to Italy. A notable population like the Americans clearly prefer to drink Italian wine over French ones.

While this news still leaves me surprised, I decided to further investigate my analysis by also observing the “Value” of the wine sold and consequently the “Average Unit Price”.



France, despite being second in terms of quantity of wine sold and despite having suffered from the pandemic more than Italy both in terms of turnover and volume of wine sold, clearly surpasses Italy in terms of turnover.

(A bar histogram was chosen for Yearly Value and Volume instead of a line graph because they are annual data overlapping between two years (Vintage))

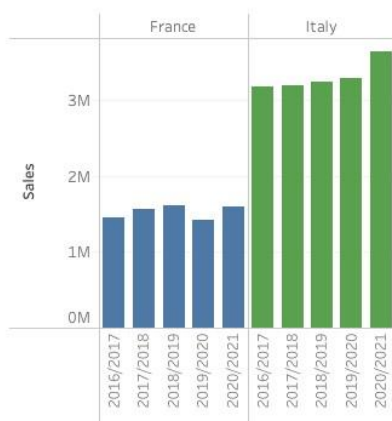
But how does France make almost double the amount of by selling about 20% less wine? It would mean that France sells its wine at a much higher price than Italy.

This fact is confirmed by the line graph, which shows how in the last two decades not only the Average Unit Price has always been higher than that of Italian wine, but also that it has grown at a fast pace.

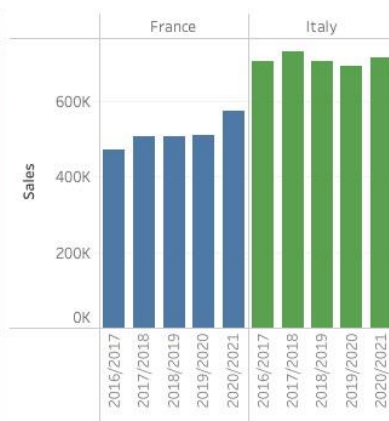
Let's see now how the markets have moved in the last 6 years in the world and continue our comparison between France and Italy.

In-depth analysis of the main importing States

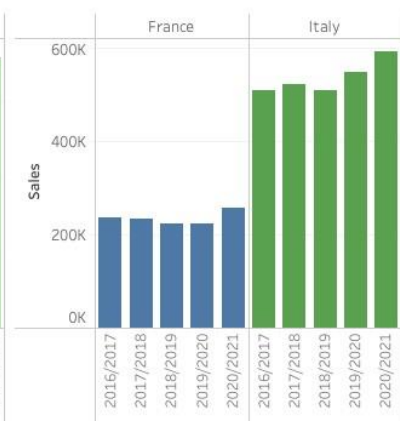
Sales in USA 🇺🇸



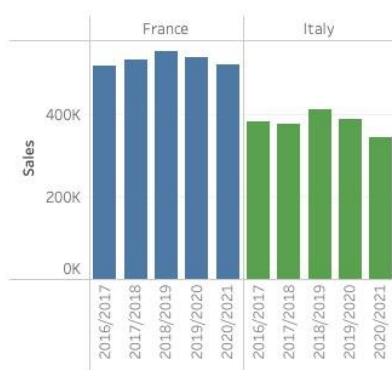
Sales in CANADA 🇨🇦



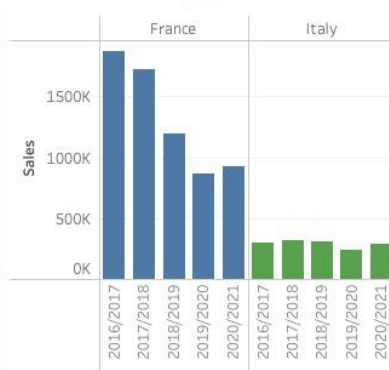
Sales in SWITZERLAND 🇨🇭



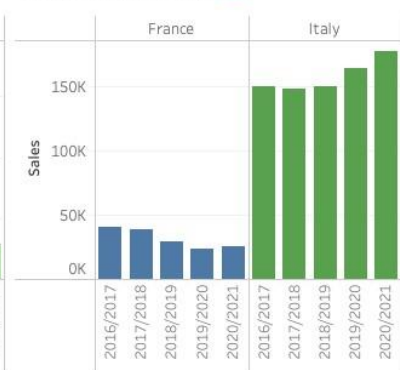
Sales in JAPAN 🇯🇵



Sales in CHINA 🇨🇳



Sales in NORWAY 🇳🇴



We note that in general Italy sells more wine in almost all of these countries with the exception of Japan and China. Furthermore all the trends are growing with the exception of Japan for Italy and China and Norway for France.

Conclusions

To conclude, we can say that the pandemic has not disturbed the bottled wine market so much, as there have not been such drastic drops in volumes, turnover and average prices. This may be due to the fact that habits of when and where to drink wine have evolved around the world. According to many studies and articles, in fact, the online sale of bottled wine has increased dramatically along with the consumption of wine on private occasions.

France could be worried about the behavior of China, her largest key customer, which is drastically reducing the amount of imported French wine, perhaps due to the adoption of restrictive import policies.

Italy benefits from the fact that it sells more wine but should invest more in increasing the average unit price.