



# Vivino

## Wine vintage and rating analysis

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# Objective

Analyze Spanish red wine vintages in budget price range, up to €13 per bottle.

- 60% of Spanish population are wine drinkers.
- 70% of all wine consumed in Spain is Red.
- Average price per liter consumed is < €6.
- *Vintage* = year when wine was produced.

# **My interest was to know if:**

- for an average consumer, there is a significant difference between ratings of vintages
- consumer ratings confirm expert opinion on quality of vintages
- weather conditions confirm perceived quality (ratings)

**Rioja  
Ribera del Duero  
South Catalunya  
(Priorat + Terra Alta + Montsant + Cariñena + Tarragona)**

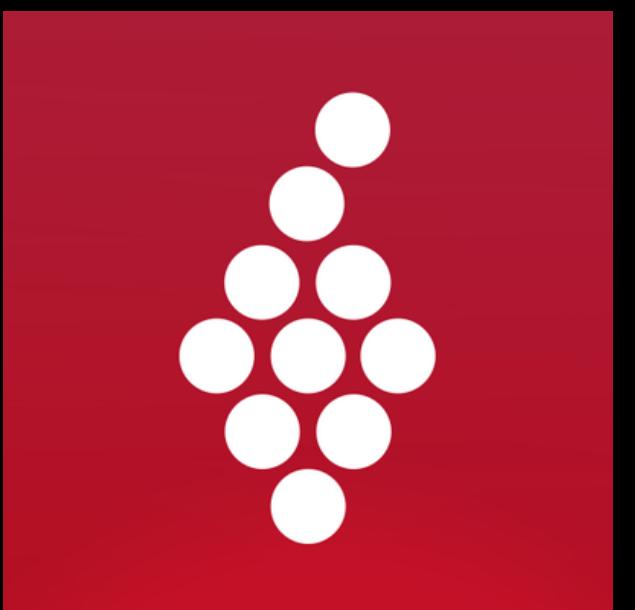
*Regions*

**2016-2020**

*Vintages*

Languages:  
Python, SQL

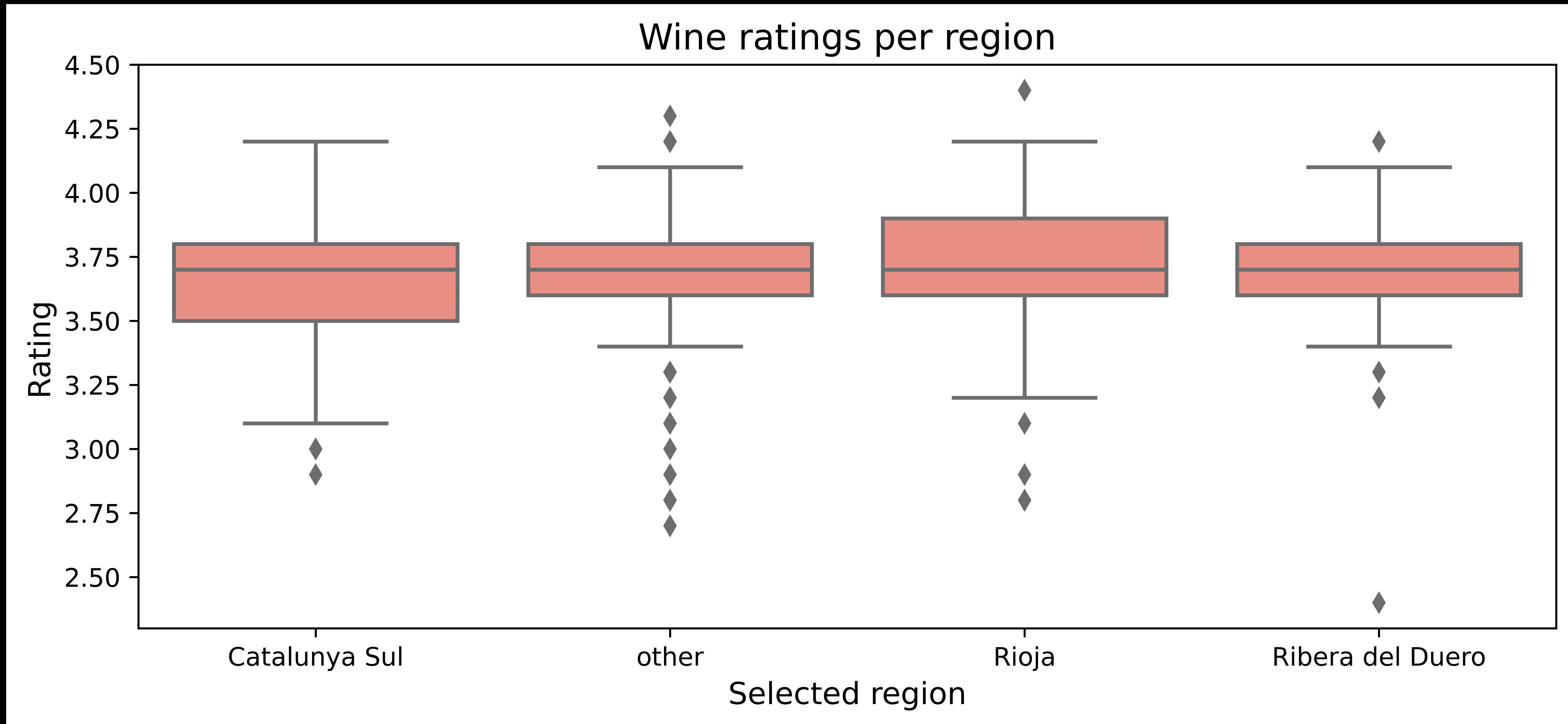
Datasets:



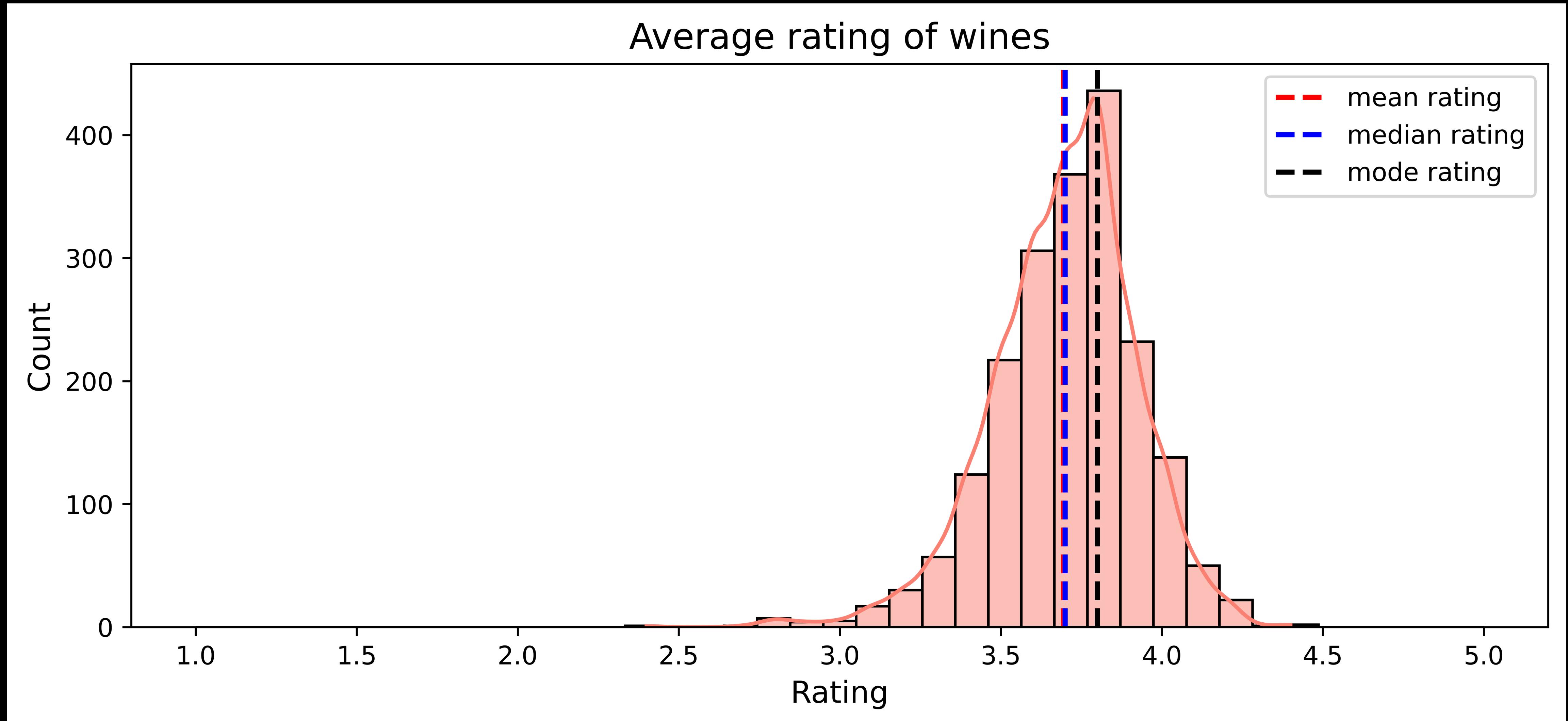
# Limitations

- wine dataset from 2021, includes only wines that were in Vivino database at that moment
- only budget wines included, up to €13 per bottle
- only including red wines
- comparing vintages across all wines, but not comparing vintages within the same wine brand
- observing yearly weather conditions, even-though the weather could be affecting vineyards on seasonal, or even daily, basis

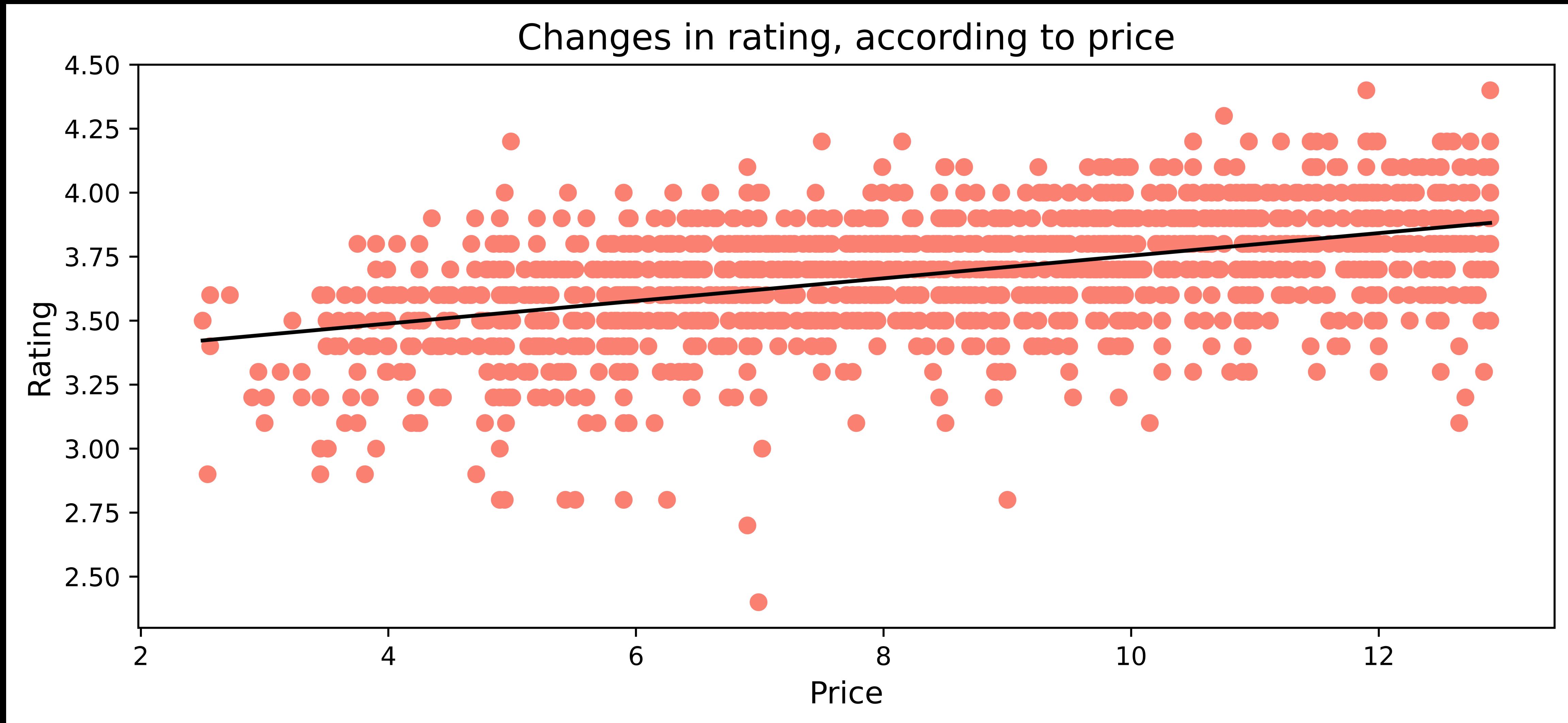
# Wine ratings across the 3 observed regions, for all years.



**Mean = Median = 3.7**  
**Mode = 3.8**



Price and ratings appear to be moderately correlated ( $\text{corr} = 0.48$ ).



# Best wineries & Best wines overall, all years

	Winery	Region	nr. of reviews	Average rating
0	Quinta Mazuela	Cariñena	25.0	4.2
1	De Muller	Priorato	392.0	4.2
2	Murua	Rioja	149.0	4.2
3	Solà Classic	Priorato	26.0	4.2
4	Félix Solís	Vino de España	29389.0	4.2
5	Dehesa El Carrascal	Almansa	33.0	4.2
6	Dominio do Bibei	Ribeira Sacra	71.0	4.2
7	Vinos en Voz Baja	Rioja	36.0	4.2
8	Dominio del Bendito	Toro	486.0	4.1
9	Maquiavelo	Jumilla	33.0	4.1
10	Legón	Ribera del Duero	269.0	4.1
11	Marques de Tomares	Rioja	491.0	4.1
12	Tierra De Cubas	Cariñena	55.0	4.1
13	Patojo	Alicante	27.0	4.1
14	Palacio de Villachica	Toro	72.0	4.1
15	La Rioja Alta	Rioja	233.0	4.1
16	Ilurce	Rioja	119.0	4.1
17	Castillo de Aresan	Castilla	109.0	4.1
18	Liberalia	Toro	114.0	4.0
19	Venta del Puerto	Valencia	589.0	4.0

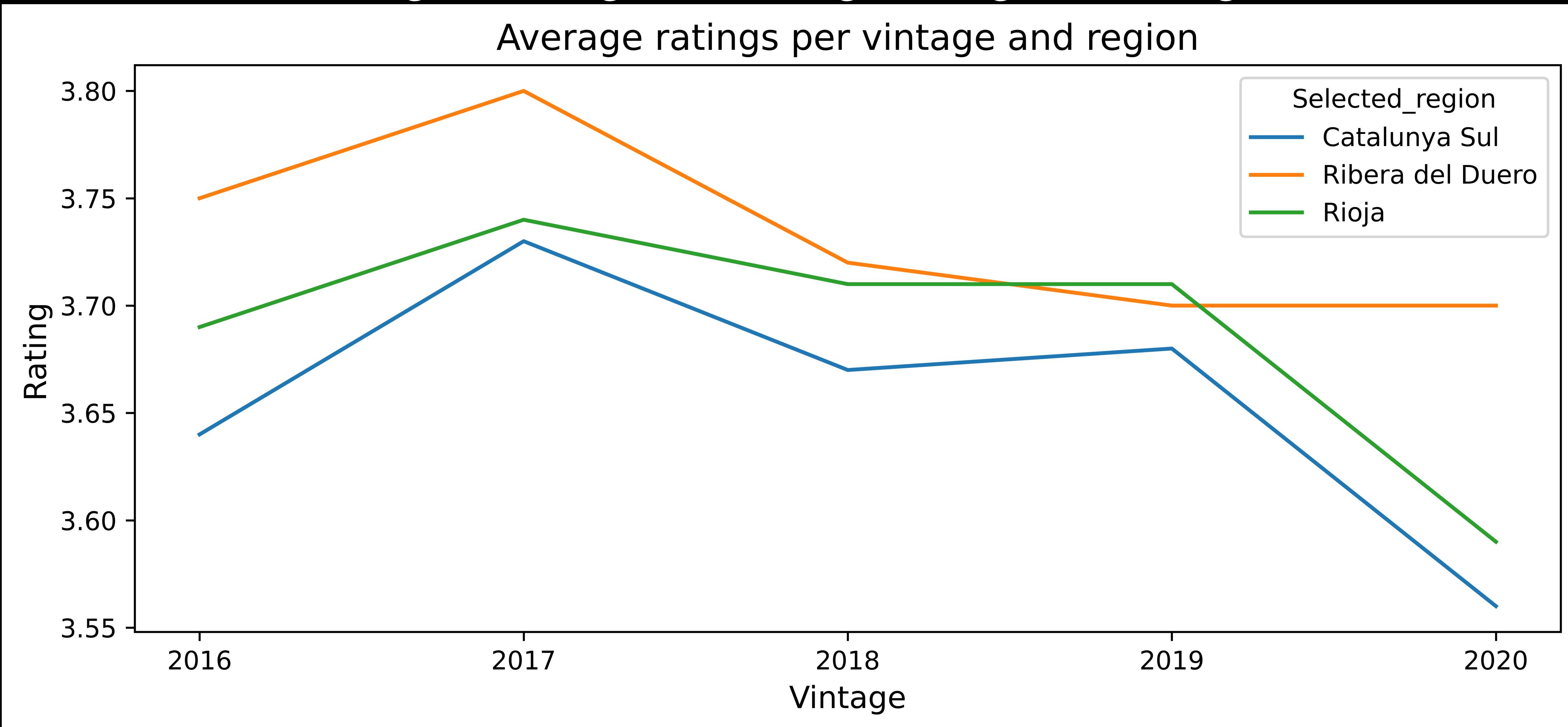
	Wine	Region	Rating	Price	num_review
0	Rioja Santiago Reserva Cuarto Año 2015	Rioja	4.4	11.90	39
1	Cerro Añon Rioja Gran Reserva 2015	Rioja	4.4	12.90	86
2	Cero 2020	Toro	4.3	10.75	40
3	Mucho Más Tinto N.V.	Vino de España	4.2	4.99	29389
4	Mar García 2018	Almansa	4.2	7.50	33
5	Sericis Cepas Viejas Monastrell 2017	Valencia	4.2	8.15	524
6	5 Finques (Fincas) Reserva 2017	Empordà	4.2	10.50	648
7	Legítim Crianza 2018	Priorato	4.2	10.95	392
8	Xtréme Ecológico Crianza 2018	Rioja	4.2	10.95	43
9	La Atalaya del Camino 2019	Almansa	4.2	11.21	843
10	Colección Pago Los Canteras Syrah Somontano 2018	Somontano	4.2	11.45	35
11	María 2018	Valencia	4.2	11.50	59
12	1777 Bleu 2015	Priorato	4.2	11.60	26
13	Damana Crianza Tempranillo 2018	Ribera del Duero	4.2	11.90	78
14	Ribeira Sacra Refugallo 2018	Ribeira Sacra	4.2	11.90	71
15	Rioja Reserva 2014	Rioja	4.2	11.90	287
16	Quinta Mazuela Garnacha 2016	Cariñena	4.2	11.95	25
17	Costumbres Tinto 2019	Rioja	4.2	11.99	36
18	Crianza 2018	Ribera del Duero	4.2	12.50	154
19	Uclés Syrah - Merlot 2017	Uclés	4.2	12.55	29

**It is possible to buy cheaper wines with good ratings above 4.0  
(correlation insignificant 0.11)**



# Catalunya wines consistently rated lower, compared to Rioja and Ribera del Duero – 2017 vintage with highest average ratings for all regions

Average ratings per vintage and region



## Wine Spectator:

- \* *Some of the best Spanish vintages from last decade are the 2016 and 2019.*
- \* *Rioja vintages of 2017 of inconsistent quality, due to tough weather.*

What do Vivino users say?

H0: Year 2016 produced good vintages, and have the rating the same or above average of all ratings (3.7)

H1: Users didn't rate 2016 vintages as exceptional - ratings are below average ( $H_1 < 3.7$ ).

H0: Year 2019 produced good vintages, and have the rating the same or above average of all ratings (3.7)

H1: Users didn't rate 2019 vintages as exceptional - ratings are below average ( $H_1 < 3.7$ ).

z-score, p\_value = 0.52508675 / 0.24348774 > alpha 0.05

At 0.95 significance level we don't have enough information to reject either H0. Based on Vivino user ratings, we cannot say that 2016 nor 2019 vintage were on average better, compared to other vintages.

**H0:** Year 2017 produced lower quality vintages in Rioja, and have the rating the same or below average of all ratings (3.7)

**H1:** Users didn't rate 2017 Rioja vintages as lower quality - ratings are above average ( $H_1 > 3.7$ ).

**z-score, p\_value = 0.01234265 < alpha 0.05**

Reject H0 at 0.95 significance level.  
Rioja user ratings of 2017 vintages are above the average 3.7

**Do wines from most reviewed regions suggest they are of better quality?**

Rioja seems to be the most popular region by far (with 167244 reviews), followed by Ribera del Duero (56166 reviews).

**H0: Rioja and Ribera del Duero have the same quality / same rated wines.**

**H1: There is a difference in ratings - one is better than the other.**

**t-score, p\_value = 0.50434291 > alpha 0.05**

**At 0.95 significance level there is no reason to assume Rioja has better rated wines than Duero. Cannot reject H0.**

# Weather conditions vs. Vintage quality.

Considering there was no significant difference in the ratings of Rioja and Duero wines, can we guess it was because weather conditions were similar, and produced good vintages between 2016-2020 in both regions?

**H0: Weather conditions were the same across Rioja and Ribera del Duero regions.**

**H1: Weather conditions were not the same.**

ANOVA, p\_value\_precipitation = 0.143532  
p\_value\_temperature = 0.813278  
> alpha 0.05

Cannot reject H0. There is no reason to assume Rioja had different precipitation nor temperature conditions than Duero.

# Conclusion

**TO BE ON THE SAFE SIDE:**

**When in doubt about budget reds,  
choose Ribera del Duero (from 2017).**

**And consider paying a few € more. :)**

