

Article

In Vino Veritas? An Alternative Story of European Convergence

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Abstract: While some European antagonists claim that united Europe is a utopia, grounded on mental and cultural discrepancies as well as aversion to changes of any kind, this paper challenges this cultural heterogeneity by looking at the history of the EU from the perspective of alcohol consumption and its development. By using WHO data over the last 50 years I show how consumption patterns of European countries evolved over time, in terms of volumes and composition of alcohol intake per-capita, outlining the major tendencies of the (converging) European market.

Keywords: European convergence; alcohol consumption; income

1. Introduction

European integration, European convergence, their speed and extent as well as their underlying reasons and their consequences have been massively discussed by the Europe's supporters and antagonists alike in the course of the last decade(s). The peak of the debates about convergence and its absence was reached in the aftermath of the global financial crisis, when the asymmetries within Europe became apparent and a remedy-search rush started. Yet some years later, cures are still being sought and the discussion on how united 'united Europe' actually is remains as relevant as before. The debate has recently received new fuel from Brexit and the results of the Italian and later the Catalan referendum, besides being slow-cooked by modest efforts of post-crisis policy to recreate the pre-crisis standard of living for European citizens.

Confronted with the question of why convergence of European countries does not seem to work, some name deep cultural differences between the nations and the institutional asymmetries that—at least in part—result from diverse mentalities of nations populating Europe [1]. People of different cultures seem to be averse to switching their habits and preferences, including practices of doing business or paying taxes. Not surprisingly, they fail to agree on some principal things, acutely needed if member states aim at operating jointly on some supra-national level.

This paper challenges this cultural heterogeneity and rigidity point of view by looking at Europe from a different perspective. It is long known that to find the reason for some event or action, one needs to follow money. While in the European debate this issue tends to be rather difficult to trace in an unbiased manner, here I adapt the ancient saying 'In vino veritas' and follow wine to look at the controversial European love-hate history of the recent five decades from the alcohol consumption perspective and the development of its patterns across European countries as the European Union gradually evolved.

To illustrate my point I rely on the WHO data on alcohol consumption (1960–2015), which includes information on absolute consumption levels by the population over 15 years old in terms of pure alcohol and its division between beer, wine, spirits and other beverages. The remainder of the paper is as follows. Section 2 briefly summarizes various stages of EU foundation and enlargements. Section 3 tackles the question of how European alcohol consumption evolved over time. Section 4 investigates

whether the development of alcohol consumption can be explained by income. Section 5 looks at the structure of consumed alcohol and its development over decades. Section 6 touches on whether the patterns observed in data are indeed illustrations of European convergence or rather simply side effects of globalization. Section 7 summarizes findings.

2. A Very Brief History of the European Union

The recent history of European integration (or disintegration) goes back to the aftermath of the Second World War. The EU traces its origins back to the European Coal and Steel Community (ECSC) and the European Economic Community (EEC), formed by the six ‘inner’ countries (Belgium, France, Germany, Italy, Luxembourg and The Netherlands), in 1951 and 1958, respectively. This institution expanded a few times before the Maastricht Treaty officially established the European Union in 1993. The European Community has expanded seven times, yet its enlargements can be divided into four larger waves. The Western enlargement (1973) resulted in acceptance of Denmark, Ireland and the UK. The Southern enlargement constituted of two stages: in 1981 Greece was accepted and in 1986 Portugal and Spain became members. The third wave brought Austria, Sweden and Finland into EU in 1995. Finally, the largest, Eastern EU expansion, started in 2004, when 10 eastern countries including Estonia, Latvia, Lithuania, Poland, Czech Republic, Slovenia, Slovakia, Malta, Cyprus and Hungary were accepted. Later, in 2007, Romania and Bulgaria joined the group, and Croatia followed in 2013 (Table 1).

Table 1. Stages of the European Union enlargement.

Member Countries	1967	1973	1981	1986	1995	2004	2007	2013
0: Belgium (BE), Luxembourg (LU), The Netherlands (NL), France (FR), Germany (DE), Italy (IT)	X	X	X	X	X	X	X	X
1: Denmark (DK), Ireland (IE), The United Kingdom (UK)		X	X	X	X	X	X	X
2: Greece (GR)			X	X	X	X	X	X
Portugal (PT), Spain (ES)				X	X	X	X	X
3: Austria (AT), Sweden (SE), Finland (FI)					X	X	X	X
4: Estonia (EE), Latvia (LV), Lithuania (LT), Poland (PL), Czech Republic (CZ), Slovenia (SI), Slovakia (SK), Malta (MT), Cyprus (CY), Hungary (HU)						X	X	X
Romania (RO), Bulgaria (BG)							X	X
Croatia (HR)								X

Note: Different shades of blue refer to different stages of the (pre-) EU enlargement.

3. How Much Do We Drink?

I start with plotting total alcohol consumption of the countries of the European Union over the time horizon of the analysis (Figure 1).

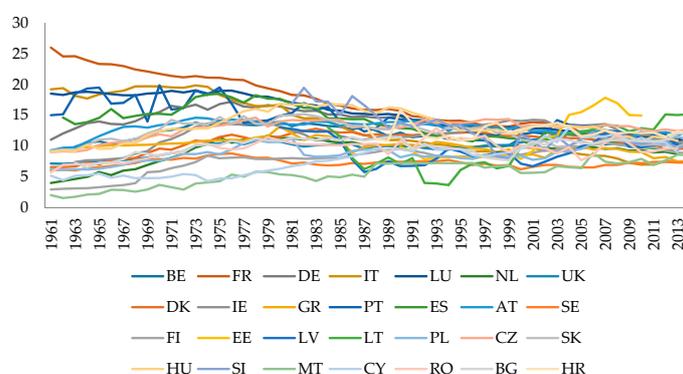


Figure 1. Per-capita alcohol consumption in the European Union (1961–2014), liters of pure alcohol (LPA).

Dispersion of per-capita consumption clearly receded over the last 50 years. The only deviations from the overall pattern can be observed for the Baltic countries, Estonia and Latvia. Most of the conversion seems to be driven by the countries with initially high alcohol intake—France, Italy, Portugal, Luxembourg and Spain. Countries with moderate per-capita consumption did not change much of their alcohol intake in absolute terms, while countries with initially low per-capita consumption (Malta, Finland and Cyprus) converged upwards.

Table 2 shows more detailed information on the overall alcohol consumption and confirms that it did not decrease due to newcomers (which entered the political map and the database later). On the one hand, the mean and the maximum values of alcohol consumption in 2010 are considerably lower than those of the year 1970. On the other hand, the minimum level of alcohol consumption has also increased—from less than 4 liters in 1970 to 6 liters in 2010. In the 1980s both the mean and the median alcohol consumption across European countries were at their highest—at the value of about 13 liters, and the 2000s was the decade with smallest per-capita numbers—only about 10 liters.

Table 2. Alcohol consumption in the EU: levels, descriptive statistics and dispersion.

Country	Alcohol Consumption, LPA					Absolute Distance from the Mean					Absolute Distance from the Median					
	1970	1980	1990	2000	2010	1970	1980	1990	2000	2010	1970	1980	1990	2000	2010	
AT	13.40	13.60	13.90	13.20	12.10	1.90	0.90	2.50	3.00	2.10	3.10	0.75	2.40	3.05	1.85	
BE	12.40	14.00	12.20	10.80	10.60	0.90	1.30	0.80	0.60	0.60	2.10	1.15	0.70	0.65	0.35	
BG	8.40	10.80	11.50	9.70	10.20	3.10	1.90	0.10	0.50	0.20	1.90	2.05	0.00	0.45	0.05	
CY	4.80	6.30	9.50	7.80	8.60	6.70	6.40	1.90	2.40	1.40	5.50	6.55	2.00	2.35	1.65	
CZ	11.90	14.00	13.00	13.20	12.70	0.40	1.30	1.60	3.00	2.70	1.60	1.15	1.50	3.05	2.45	
DE	15.50	16.40	14.90	12.90	11.20	4.00	3.70	3.50	2.70	1.20	5.20	3.55	3.40	2.75	0.95	
DK	9.60	11.50	11.90	11.70	10.40	1.90	1.20	0.50	1.50	0.40	0.70	1.35	0.40	1.55	0.15	
EE			9.80	7.70	10.10			1.60	2.50	0.10			1.70	2.45	0.15	
ES	15.30	17.70	12.90	11.10	9.60	3.80	5.00	1.50	0.90	0.40	5.00	4.85	1.40	0.95	0.65	
FI	4.50	5.90	7.50	7.60	8.50	7.00	6.80	3.90	2.60	1.50	5.80	6.95	4.00	2.55	1.75	
FR	21.80	18.70	15.50	13.40	11.70	10.30	6.00	4.10	3.20	1.70	11.50	5.85	4.00	3.25	1.45	
GR	10.30	13.10	10.30	8.50	7.90	1.20	0.40	1.10	1.70	2.10	0.00	0.25	1.20	1.65	2.35	
HR			15.90	12.70	10.70			4.50	2.50	0.70			4.40	2.55	0.45	
HU	12.40	16.90	16.20	12.10	10.80	0.90	4.20	4.80	1.90	0.80	2.10	4.05	4.70	1.95	0.55	
IE	10.00	12.30	11.50	12.50	11.90	1.50	0.40	0.10	2.30	1.90	0.30	0.55	0.00	2.35	1.65	
IT	19.70	16.70	10.90	9.30	6.10	8.20	4.00	0.50	0.90	3.90	9.40	3.85	0.60	0.85	4.15	
LT			7.00	9.20	11.40			4.40	1.00	1.40			4.50	0.95	1.15	
LU	18.70	17.60	15.00	13.10	11.40	7.20	4.90	3.60	2.90	1.40	8.40	4.75	3.50	2.95	1.15	
LV		12.60	6.70	7.00	9.20			0.10	4.70	3.20	0.80		0.25	4.80	3.15	1.05
MT	3.60	5.40	7.10	5.80	7.60	7.90	7.30	4.30	4.40	2.40	6.70	7.45	4.40	4.35	2.65	
NL	7.50	11.30	9.90	10.10	9.30	4.00	1.40	1.50	0.10	0.70	2.80	1.55	1.60	0.05	0.95	
PL	7.60	10.70	8.20	8.40	10.00	3.90	2.00	3.20	1.80	0.00	2.70	2.15	3.30	1.75	0.25	
PT	19.90	14.90	14.40	11.80	10.50	8.40	2.20	3.00	1.60	0.50	9.60	2.05	2.90	1.65	0.25	
RO	8.50	10.50	8.90	10.20	9.00	3.00	2.20	2.50	0.00	1.00	1.80	2.35	2.60	0.05	1.25	
SE	7.90	7.70	7.40	6.20	7.20	3.60	5.00	4.00	4.00	2.80	2.40	5.15	4.10	3.95	3.05	
SI			13.80	9.90	10.30			2.40	0.30	0.30			2.30	0.25	0.05	
SK	12.70	14.90	13.50	10.80	10.40	1.20	2.20	2.10	0.60	0.40	2.40	2.05	2.00	0.65	0.15	
UK	8.50	10.70	9.60	9.90	9.60	3.00	2.00	1.80	0.30	0.40	1.80	2.15	1.90	0.25	0.65	
Mean	11.50	12.70	11.40	10.20	10.00	7.83	3.03	2.52	1.87	1.21	4.03	3.03	2.51	1.87	1.19	
Median	10.30	12.85	11.50	10.15	10.25	3.60	2.20	2.45	1.85	0.90	2.70	2.15	2.35	1.85	1.00	
Min	3.60	5.40	6.70	5.80	6.10	0.40	0.10	0.10	0.00	0.00	0.00	0.25	0.00	0.05	0.05	
Max	21.80	18.70	16.20	13.40	12.70	7.83	3.03	2.52	1.87	1.21	4.03	3.03	2.51	1.87	1.19	
STD	5.080	3.80	2.96	2.26	1.56											
CV	44.17	29.92	25.96	22.16	15.60											

Standard measures of dispersion (standard deviation, STD, and coefficient of variation, CV) also suggest a reduction in the variation of alcohol consumption across European countries. Furthermore, the absolute distance from the mean and the median clearly decline with time, suggesting that the consumption patterns smooth out across European countries. If we calculated changes in these convergence parameters on the decade-to-decade basis, it would become clear that the process of convergence started long ago and the changes cumulated over time, resulting in the drastic difference between the situation of today and some 40–50 years ago.

4. To What Extent Can Income Explain Drinking Habits?

In this section I model total consumption of pure alcohol as a function of a country's GDP per capita. While some European countries seem to clearly decline their per-capita intake as their

economies grow (e.g., France), the others follow the opposite path (e.g., Finland). This calls forth even more questions, e.g., whether a causal link between GDP and alcohol consumption exists, and if yes, what does this relation look like? While I am not the first to ask this question, most of the earlier research focused on beer [2,3] suggesting a strong and often U-shaped relationship between variables. To answer the first question, Figure 2 plots the alcohol intake versus GDP per capita across EU-28 countries in a two-decade interval.

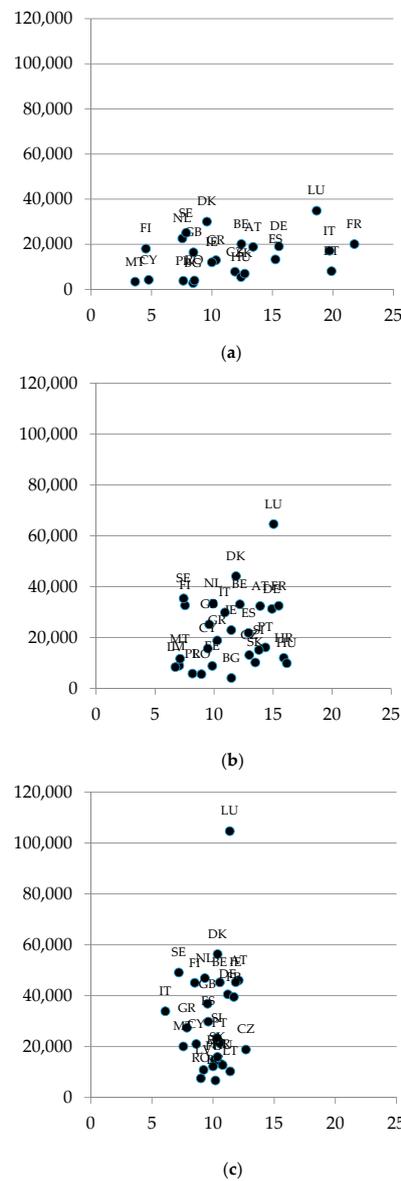


Figure 2. Per-capita income and alcohol consumption in the EU-28 in (a) 1970, (b) 1990) and (c) 2010. Note: Real Gross Domestic Product (GDP) per capita in US dollars (USD) is on the Y-axis, alcohol consumptions (in liters of pure alcohol)—on the X-axis.

Figure 2 sketches two stories—one of convergence in alcohol consumption across EU nations, and the second of a widening income gap between its richest and poorest members. Since there seem to be some kind of linear relationship between variables, at least at the beginning of the sample, Column 1 in Table 3 reports results of a panel estimation of Equation (1), in which absolute alcohol consumption

($AC_{i,t}$) in the country i over time t is explained as a function of GDP per capita ($GDP_{i,t}$) and country- and time fixed effects (μ and ω respectively) to account for unobserved heterogeneity¹:

$$AC_{i,t} = \alpha_0 + \alpha_1 GDP_{i,t} + \mu_i + \omega_t + \varepsilon_{i,t} \quad (1)$$

The GDP estimate is negative but rather small. This result may be driven by a poor approximation of the income–alcohol intake relationship: as we have seen at the beginning of this chapter, different countries might have an opposite relation between the two variables, depending on the level of the country’s income. This brings us to the second question—linearity of the income-alcohol consumption relation. To test for it empirically, I augment Equation (1) by a quadratic GDP term:

$$AC_{i,t} = \alpha_0 + \alpha_1 GDP_{i,t} + \alpha_2 GDP_{i,t}^2 + \mu_i + \omega_t + \varepsilon_{i,t} \quad (2)$$

The results (Column 2 in Table 3) reveal that the relation between the two variables is indeed nonlinear. The outcomes suggest that alcohol consumption increases with GDP up to a certain point and declines after. This is in line with high-income countries (which mostly were the core or belong to first waves of the EU enlargement) reducing their alcohol consumption (as shown on Figure 1), while countries with lower income (e.g., Eastern Europe) increasing it when GDP per capita grows. This becomes obvious when Column 3 of Table 3 is considered. Here I include interaction terms between GDP and countries that were accepted to the EU at the different stages of EU enlargement (see Table 1 for a definition of different waves of the EU enlargement).

$$AC_{i,t} = \alpha_0 + \alpha_1 GDP_{i,t} + a_3 GDP_{i,t} \times Wave1 + a_4 GDP_{i,t} \times Wave2 + a_5 GDP_{i,t} \times Wave3 + a_6 GDP_{i,t} \times Wave4 + \mu_i + \omega_t + \varepsilon_{i,t} \quad (3)$$

While the overall consumption seems to decline with higher GDP per capita in the EU, newcomers—especially from the most recent, Eastern enlargement—increase their alcohol consumption as income grows. The relation between alcohol consumption and income seems to be nonlinear and the impact of GDP developments on the patterns of alcohol intake is highly heterogeneous across the countries that entered the EU at different stages.

Table 3. Regression results from fixed-effects models.

Model	(1)	(2)	(3)
C	10.340 *** (0.35)	6.517 *** (0.56)	10.997 *** (0.73)
GDP (000 USD)	−0.048 *** (0.01)	0.157 *** (0.03)	−0.062 *** (0.01)
GDP-squared		−0.001 *** (0.00)	
GDP × Wave1			0.195 *** (0.01)
GDP × Wave2			−0.040 (0.03)
GDP × Wave3			0.195 *** (0.01)
GDP × Wave4			0.481 *** (0.04)
Time FE	Y	Y	Y
Country FE	Y	Y	Y
Adj.R-squared	0.64	0.65	0.75

Notes: ***, ** and * refer to statistical significance at 99%, 95% and 90% level. Robust standard errors are reported in parentheses. Greece and 2000 are reference categories in models (1) and (2). The core 6 countries and 2000 are reference countries in model (3). Complete outcomes are reported in Appendix A.

¹ Such specification is clearly a reduced-form model, as some important determinants of alcohol consumption e.g., prices that vary across years and countries and hence not captured by fixed effects are not included. Further research is encouraged to revisit this issue once reliable price data are available.

5. What Do We Drink?

Most countries of the world are unofficially divided into beer-drinking nations, wine-lovers and those who like strong spirits [4–6]. Europe is not an exception. Countries with a pronounced appreciation for spirits tend to be associated with Northern countries where it is dark and cold most of the time (although the highest per-capita consumption of spirits is in Lithuania, Poland, Czech Republic, Slovakia and Bulgaria [7]), while wine-connoisseurs are traditionally placed along the Mediterranean coast (France, Croatia, Portugal, Slovenia and Italy). What remains in-between is allocated for beer (major beer-consuming countries are Czech Republic, Poland, Austria, Belgium and Germany). In this chapter I show that despite the observation that north European countries consume a lot of spirits, some of them turned into beer drinkers in the course of the time, while not all the south of Europe is as devoted to wine as it was or is imagined. The structure of alcoholic consumption and its development over time is a fascinating story that reveals that despite differences in cultural backgrounds, initial preferences, economic conditions and all other features that make Europe so heterogeneous, convergence here is undeniable.

Figure 3 uses tertiary plots to illustrate that convergence between European countries is obvious and it started long before the introduction of a single market or a single currency. The tertiary graphs below show the share of total per capita consumption that is allocated to beer, wine and spirits. Please note that the WHO numbers are liters of pure alcohol, thus 1 liter of ‘beer’ and 1 liter of ‘spirits’ in this graph are actually very different amounts of beverages consumed, given that beer has on average about 5% alcohol and spirits—above 40%. In these figures a country whose consumption is solely allocated to beer will be placed at the “Beer” corner of the triangular graphic. A country in which alcohol consumption is evenly spread among three types of alcoholic beverages will be placed directly in the middle of a triangle. Finally, while tertiary plots reveal structure of alcohol consumption (share of beer, wine or spirit in total consumption of these beverages measured in liters of pure alcohol), they do not tell us anything about the volume consumed (those were discussed in previous sections).

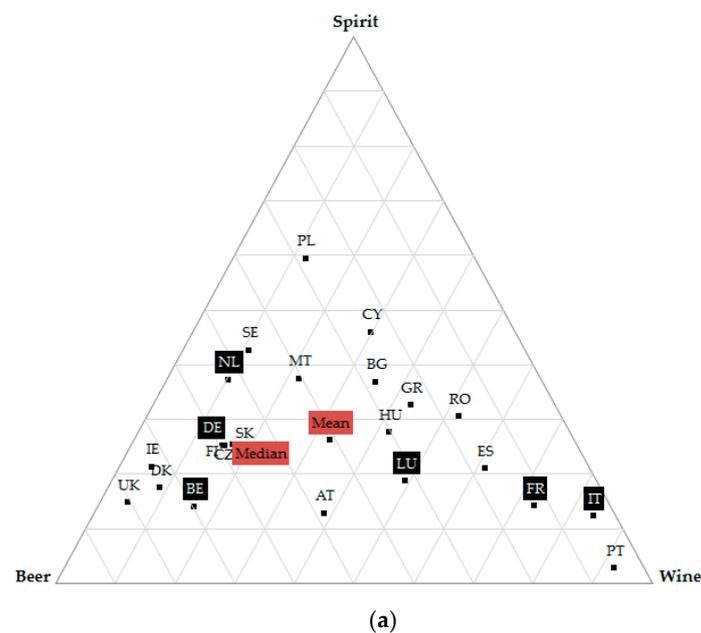


Figure 3. Cont.

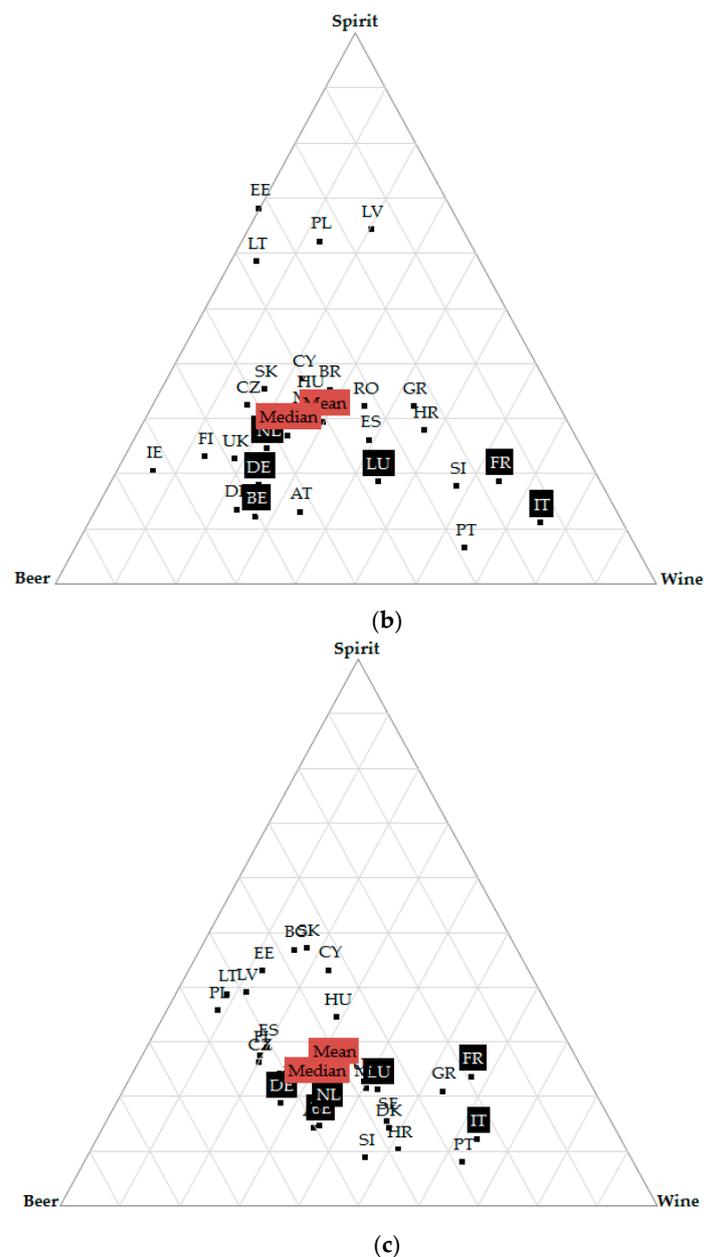


Figure 3. Tertiary plots for the EU-28 alcohol consumption in (a) 1970, (b) 1990 and (c) 2010. Notes: Dark-shaded dots refer to the six founding members. Median and mean of the sample are highlighted in crimson.

If one ignores the fact the ‘unreported alcohol consumption’ (which is especially pronounced in the countries of Eastern Europe and the Baltic block) is neglected in the plots, convergence is obvious. Not only do the countries on the 1970 graph become much more densely located in 1990, this process also accelerated in the following decades. In 2010 most of the countries belong to one cluster, where consumption is divided mostly between beer and wine. A smaller group of countries, which prefers spirits to wine, is composed of the Eastern European countries and the ex-USSR republics. However, even here the convergence is clear (see the positions of Estonia, Latvia, Lithuania and Poland in 1990 and 2010, but keep in mind that the spirit consumption figures might be downward biased).

If the distances between individual countries’ shares and the sample mean are calculated, it becomes obvious that on average, not much has changed over 40 years. When the median value is used as a benchmark, another picture emerges: the share of beer and spirits has declined (in the latter case substantially), while the share of wine in overall consumption increased.

Portugal, the UK, Italy, Romania, France, Spain and Ireland are the countries that converged the most over time. While in Portugal 92% of consumed alcohol came from wine in 1970 (84% for Italy, 73% for France, 61% for Spain), in 2010 these proportions were significantly lower: 63% for Portugal, 64% for Italy, 57% for France and 51% for Spain. Romania, which was a classic wine-drinking country in 1970 with 53% of consumed alcohol coming from wine, became a beer-drinking nation by 2010. The UK, where 80% of all alcohol consumed used to be derived from beer, is now a country with prevailing wine consumption, even though beer traditions are still strong. The same might soon be true for Ireland too. The country still prefers beer to other alcohol beverages, but its share declines with time. Figure 4 shows the dynamic transition of the countries discussed above.

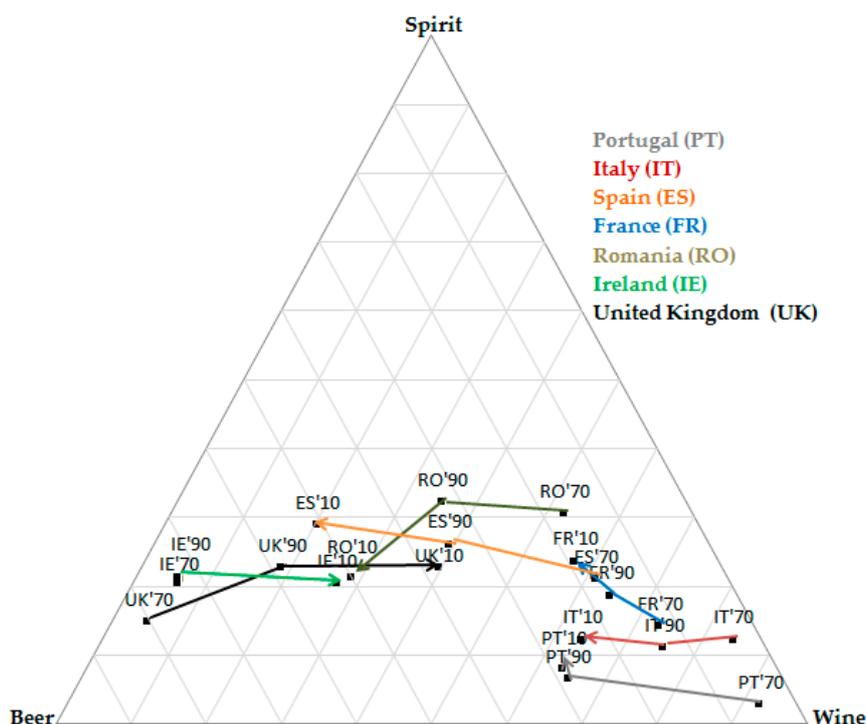


Figure 4. Dynamic development of a beverage-mix in the structure of European alcohol consumption.

The convergence of the core European countries that participated in the EU from the very beginning is drastic, which is especially true for traditional wine-drinking countries. Convergence is also observed within other European countries, although at the end of the sample their heterogeneity was still very pronounced. This, however, was driven by the EU enlargement to the East. Data suggest that a certain “westernization” of the drinking culture is in play, leading countries towards the smoothing of their preferences to a balanced consumption, mostly divided between beer and wine with a considerably smaller share of spirits. This implies a higher consumption of wine in traditional beer societies and beer among classic wine countries. The former USSR countries lead the tendency to have spirits as an important element of their alcohol basket. Nevertheless, convergence has been rapidly accelerating here as well.

6. Is Globalization the True Reason?

While some critical readers might argue that the convergence that I find has not much to do with European integration, but that it is instead driven by a larger force—the globalization of the world economy [8,9]—Figure 5 provides tertiary plots for all the countries in the WHO database in 1970 and 2010. While some shifts to the left axis can be observed, the density along the beer-spirits axis is rather driven by the inclusion of additional countries in the WHO dataset (146 in 1970 and 186 in 2010) than by the smoothing of global preferences.

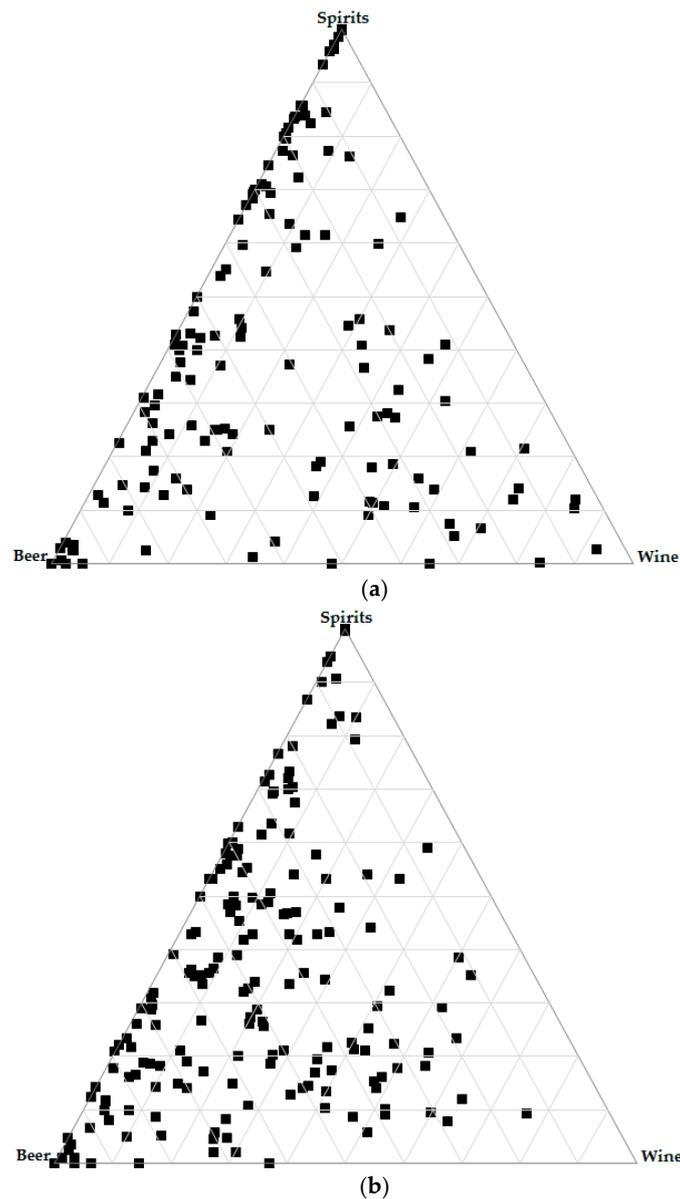


Figure 5. Tertiary plots for all the countries in the WHO database for (a) 1970 and (b) 2010. Notes: Each dot represents a particular country. Labels are omitted for the sake of the clarity of tertiary plots.

7. Summary

A number of stylized facts can be derived from the analysis presented above, together with some brief indications on how the results can be of interest for academia or policy:

1. The level of alcohol consumption (in liters of pure alcohol) has been decreasing among European countries over the last 50 years;
2. Countries that used to consume the largest amounts of alcohol sharply decreased their consumption levels over time. Countries that used to consume the smallest amounts converged upwards;
3. The differences between alcohol consumption in a particular country and a median value of the sample drastically declined over time, suggesting convergence among European countries, especially after their EU accession;

4. The relation between alcohol consumption and income is nonlinear. Furthermore, income tends to play a higher role in alcohol consumption of the East-European countries that were the last to join the EU. These findings might be relevant for European health-related institutions;
5. The pattern of alcohol consumption, which traditionally resulted in countries being classified as wine-, beer- or spirit-drinking nations smoothed over time. Some countries have turned from beer to wine drinkers, and others switched in the other direction. While there is some asymmetry in the way North-South and East-West converge occurs (with especially Baltic countries deviating from an overall EU pattern), on average, European countries tend to move towards a more similar structure of consumed alcohol. The alcohol basket becomes balanced, which is important for producers and their marketing departments all over the world.
6. This smoothing of consumed quantities and types of alcohol does not seem to result from globalization, hence in terms of the 'vino' of my title, Europe has been definitely converging over the last 50 years. This might be of interest to European protagonists and sceptics, who claim cultural differences are the pre-conditions of the failure of Europe in any supra-national form.

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Conflicts of Interest: The author declares no conflict of interest.

Appendix A. Full Estimation Results

Variable/Model	(1)		(2)		(3)	
C	10.341	***	6.517	***	10.997	***
	(0.35)		(0.56)		(0.73)	
GDP (000 USD)	−0.048	***	0.147	***	−0.062	***
	(0.01)		(0.03)		(0.01)	
GDP-squared			−0.001	***		
			(0.00)			
GDP × Wave 1					0.195	***
					(0.01)	
GDP × Wave 2					−0.041	
					(0.03)	
GDP × Wave 3					0.195	***
					(0.02)	
GDP × Wave 4					0.481	***
					(0.04)	
AT	3.824	***	2.394	***	−3.373	***
	(0.19)		(0.25)		(0.62)	
BE	2.641	***	1.177	***	1.991	***
	(0.18)		(0.25)		(0.63)	
BG	−0.406	*	2.149	***	−3.517	***
	(0.24)		(0.41)		(0.62)	
CY	−1.847	***	−0.938	**	−9.622	***
	(0.48)		(0.44)		(0.66)	
CZ	2.996	***	4.084	***	−4.179	***
	(0.19)		(0.24)		(0.61)	
DE	4.463	***	3.239	***	3.777	***
	(0.25)		(0.30)		(0.62)	
DK	2.469	***	0.112		−6.894	***
	(0.31)		(0.41)		(0.61)	
EE	1.174		3.053	***	−4.445	***
	(0.78)		(0.78)		(0.81)	
ES	3.566	***	3.318	***	3.631	***
	(0.35)		(0.36)		(0.26)	
FI	−0.858	***	−2.157	***	−7.821	***
	(0.30)		(0.31)		(0.63)	

Variable/Model	(1)		(2)		(3)	
FR	6.412 (0.46)	***	5.084 (0.51)	***	5.738 (0.72)	***
HR	2.328 (0.29)	***	4.146 (0.35)	***	−3.378 (0.64)	***
HU	3.333 (0.28)	***	4.937 (0.34)	***	−2.309 (0.61)	***
IE	2.799 (0.28)	***	2.034 (0.22)	***	−3.539 (0.58)	***
IT	2.580 (0.57)	***	1.643 (0.61)	***	1.854 (0.81)	**
LT	−0.467 (0.66)		1.668 (0.69)	**	−5.204 (0.83)	***
LU	7.165 (0.52)	***	5.080 (0.52)	***	7.005 (0.68)	***
LV	−1.178 (0.37)	***	0.945 (0.46)	**	−5.802 (0.68)	***
MT	−4.320 (0.35)	***	−3.129 (0.34)	***	−11.280 (0.61)	***
NL	0.602 (0.22)	***	−0.982 (0.28)	***	−0.070 (0.69)	
PL	−1.389 (0.25)	***	0.678 (0.37)	*	−5.797 (0.59)	***
PT	3.737 (0.30)	***	4.409 (0.31)	***	3.480 (0.25)	***
RO	−0.702 (0.25)	***	1.585 (0.40)	***	−4.490 (0.63)	***
SE	−1.861 (0.21)	***	−3.589 (0.29)	***	−9.608 (0.64)	***
SI	2.702 (0.44)	***	3.482 (0.47)	***	−6.002 (0.97)	***
SK	2.019 (0.23)	***	3.507 (0.28)	***	−3.980 (0.61)	***
UK	0.655 (0.23)	***	−0.105 (0.22)		−5.351 (0.58)	***
1969	−0.328 (0.65)		1.351 (0.66)	**	1.506 (0.58)	***
1970	0.300 (0.68)		1.900 (0.69)	***	2.088 (0.57)	***
1971	0.388 (0.64)		1.930 (0.63)	***	2.138 (0.52)	***
1972	0.698 (0.59)		2.152 (0.59)	***	2.389 (0.48)	***
1973	1.394 (0.61)	**	2.742 (0.61)	***	3.026 (0.48)	***
1974	1.414 (0.60)	**	2.717 (0.59)	***	3.003 (0.46)	***
1975	1.617 (0.58)	***	2.916 (0.59)	***	3.146 (0.44)	***
1976	1.607 (0.50)	***	2.817 (0.51)	***	3.048 (0.39)	***
1977	1.487 (0.47)	***	2.634 (0.47)	***	2.844 (0.39)	***
1978	1.626 (0.44)	***	2.706 (0.44)	***	2.915 (0.36)	***
1979	1.605 (0.42)	***	2.608 (0.42)	***	2.804 (0.33)	***
1980	1.861 (0.44)	***	2.804 (0.42)	***	3.014 (0.34)	***

Variable/Model	(1)		(2)		(3)	
1981	1.730 (0.40)	***	2.673 (0.39)	***	2.929 (0.36)	***
1982	1.657 (0.45)	***	2.567 (0.44)	***	2.789 (0.42)	***
1983	1.465 (0.41)	***	2.335 (0.40)	***	2.534 (0.36)	***
1984	1.427 (0.39)	***	2.214 (0.27)	***	2.392 (0.35)	***
1985	1.032 (0.32)	***	1.767 (0.31)	***	1.935 (0.29)	***
1986	0.780 (0.38)	**	1.453 (0.38)	***	1.609 (0.39)	***
1987	0.496 (0.39)		1.100 (0.40)	***	1.252 (0.40)	***
1988	0.522 (0.34)		1.042 (0.35)	***	1.194 (0.35)	***
1989	0.576 (0.32)	*	1.021 (0.32)	***	1.172 (0.30)	***
1990	0.735 (0.36)	**	1.113 (0.35)	***	1.246 (0.32)	***
1991	0.370 (0.32)		0.805 (0.32)	**	1.091 (0.30)	***
1992	0.129 (0.41)		0.605 (0.39)		0.976 (0.35)	***
1993	0.031 (0.41)		0.530 (0.40)		0.906 (0.36)	***
1994	−0.036 (0.39)		0.401 (0.38)		0.735 (0.34)	**
1995	−0.042 (0.36)		0.318 (0.34)		0.598 (0.29)	**
1996	−0.179 (0.35)		0.120 (0.34)		0.354 (0.28)	
1997	−0.067 (0.36)		0.151 (0.34)		0.336 (0.29)	
1998	−0.318 (0.39)		−0.174 (0.37)		−0.041 (0.32)	
1999	−0.279 (0.39)		−0.197 (0.36)		−0.111 (0.31)	
2001	0.045 (0.36)		−0.003 (0.33)		−0.049 (0.27)	
2002	0.280 (0.38)		0.189 (0.35)		0.069 (0.29)	
2003	0.494 (0.35)		0.353 (0.32)		0.163 (0.28)	
2004	0.734 (0.42)		0.527 (0.40)		0.244 (0.35)	
2005	0.643 (0.42)		0.376 (0.39)		−0.032 (0.34)	
2006	0.869 (0.45)	*	0.516 (0.42)		−0.034 (0.35)	
2007	1.046 (0.50)	**	0.62 (0.47)		−0.090 (0.39)	
2008	0.889 (0.50)	*	0.436 (0.49)		−0.303 (0.41)	
2009	0.254 (0.46)		−0.083 (0.44)		−0.602 (0.38)	
2010	0.229 (0.48)		−0.131 (0.46)		−0.704 (0.39)	*
2011	0.031		−0.343		−0.960	***

Variable/Model	(1)	(2)	(3)	
	(0.45)	(0.43)	(0.36)	
2012	0.070 (0.49)	−0.289 (0.46)	−0.921 (0.39)	**
2013	−0.091 (0.53)	−0.439 (0.51)	−1.093 (0.44)	***
2014	0.141 (0.59)	−0.260 (0.55)	−1.070 (0.48)	**
Adj. R-squared	0.64	0.65	0.75	

Notes: ***, ** and * refer to statistical significance at 99%, 95% and 90% level. Robust standard errors are reported in parentheses. Greece and 2000 are reference categories.

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