Supplementary materials

1. Descriptive analyses

Table 1 presents the mean wine glass capacity for each century. Years of origin for the eBay glasses were available only as ranges: 1980- present, 1950-1970, 1910-1940, 1890-1914, 1840-1900 and pre-1840. For the wine glasses for which the year range was classified as "pre-1840," 1840 was taken as the year approximation for these glasses. The years of origin of some of the Museum and Working Palace wine glasses were also provided as a range. For these glasses, the interval mid-point was used as an approximation for the year of origin of the wine glass.

As shown in Table 1, the mean, standard deviation and range increased over time. A joint increase of the mean and spread of the data is often observed with strictly positive outcomes and typically assumed by dedicated statistical models, like the log-normal regressions considered in Section 3 or the Poisson and gamma regressions, for example (1).

Table 1. Wine glass capacity (ml) by century

Years	Sources (n)	Total number of glasses	Capacity Range (ml)	Capacity (ml; (M (SD))
1700-1770	Museum (41)	41	32-118	66 (22)
1800-1899	Museum (2), Working Palace (14), eBay (21)	37	40-380	152 (87)
1900-1998	Working Palace (10), eBay (44), Manufacturer (90)	144	70-650	230 (106)
2000-2017	Manufacturer (90) John Lewis (99)	189	140-900	417 (170)

2. Nonparametric regression over the full time period

Regression analyses fitting the mean wine glass capacity (in ml) over time were performed using different models. Table 2 reports (i) the correlation between the observed and fitted values as well as (ii) the sum of the squared residuals of the (1) linear, (2) log-normal, (3) fourth order polynomial and (4) nonparametric local polynomial models. Estimations were obtained by means of the R software (version 3.4.2). The nonparametric regression fit displayed in Figure 1 provides the best fit because of the ability of this method to capture the change in the increase rate that occurred around 1990.

Table 2. Correlations and sum of squares of different regression models

	r (predicted and observed)	Sum residuals^2
LM	.590***	8.89e^6
Log	.665***	8.03e^6
Polynomial	.692***	7.10e^6
Nonparametric	.695***	7.05e^6

$*p < .05$, $** p < .01$, $*** p < .001$

A sensitivity analysis was conducted by fitting the median (instead of the mean) wine glass capacity (in ml) over time by means of a local polynomial quantile regression [and fitted with the package *quantreg* (version 5.34) of R]. The median fit displayed in Figure 2 shows the same pattern as the nonparametric mean fit of Figure 1, suggesting that the sharp increase of glass size starting in the early 1990s is not driven by outliers.

Figure 2. **Wine glass capacity between 1700 and 2017: local polynomial regression fit for the median.**
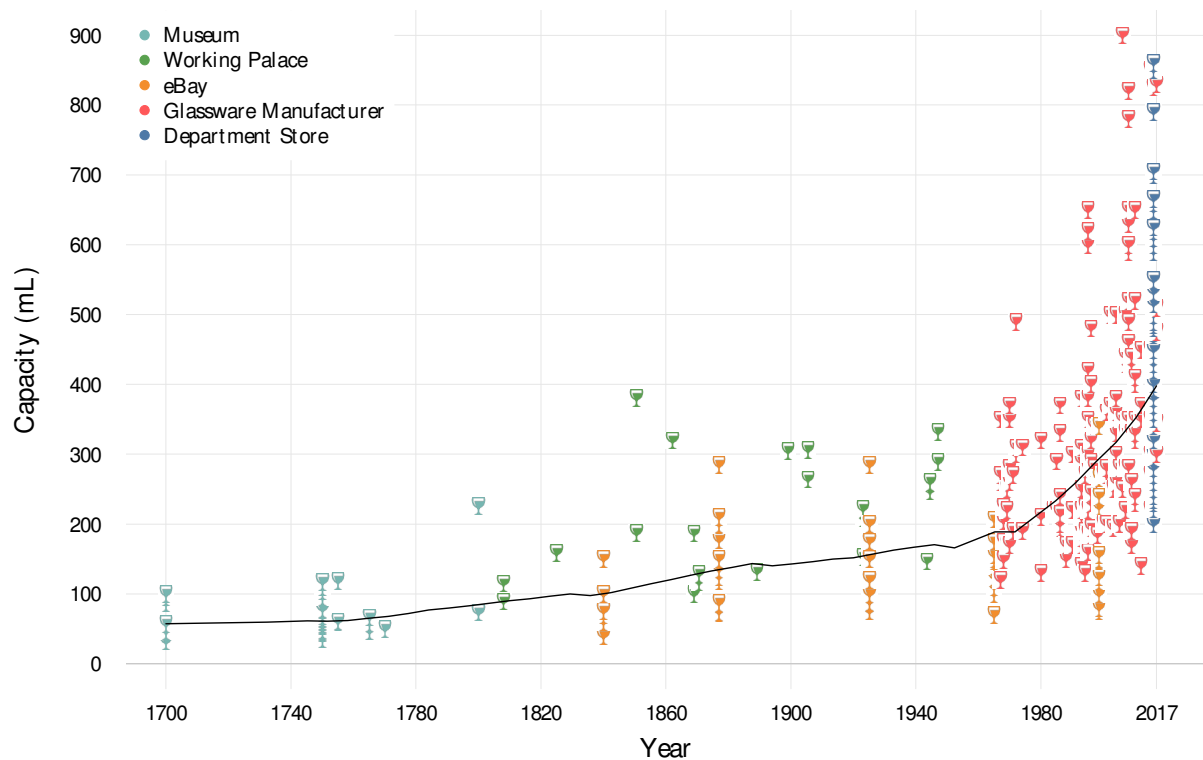
3. Regression per data source

To confirm the overall results and minimise the potential risk of bias from the dataset being collected from various sources at different time periods, classical and robust regressions [fitted with the package *robustbase* (version 0.92-8) of R] were carried out on the log-transformed data for each source separately, with the exception of the department store, as these data were from a single year. Table 3 reports the corresponding estimates and shows that the increase of the average glass capacity over time could be noted for all periods from 1800. The conclusions are the same for the classical and robust estimators, suggesting that they are not affected by model violations like outliers (2). Figure 3 shows the fit of the classical estimator per data source on the original scale as well as the corresponding 95% pointwise confidence bounds.

Table 3. Regression parameter estimates for wine glass capacity (ml), conducted separately by each source.

Source	N	Year range	Variable	Classical Regression			Robust Regression		
				Estimate (95 % CI)	p	Adjusted R²	Estimate (95 % CI)	p	Adjusted R²
Museum	43	1700-1800	Intercept	-1.005	.811		5.278	.349	
			Year	.003 (-.001, .007)	.222	.01	-.001 (-.007, .005)	.838	-.02
Working Palace	24	1808-1947	Intercept	-2.413	.526		-3.269	.351	
			Year	.004 (.000, .007)	.052	.12	.005(.001, .009)	.020*	.15
eBay	65	1840-2016	Intercept	-1.516	.408		-1.622	.452	
			Year	.003 (.001, .005)	<.001***	.15	.003 (.001, .005)	.003**	.14
Glassware Manufacturer	180	1967-2017	Intercept	-19.96	<.001***		-18.77	<.001**	
			Year	.013 (.009, .017)	<.001***	.16	.012 (.008, .016)	<.001***	.15

*p < .05, ** p < .01, *** p < .001

Figure 3. **Wine glass capacity between 1700 and 2017: log-normal (classical) regression fit for the mean glass capacity per data source and 95% pointwise confidence bounds.**

References:

1. McCullagh P, Nelder J. Generalised linear modelling. Chapman and Hall: New York. 1989.
2. Heritier S, Cantoni E, Copt S, Victoria-Feser M-P. Robust methods in Biostatistics: John Wiley & Sons; 2009.