

Does the UK gain power if it leaves the EU? Voting power analysis suggests not. In fact just the opposite.

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A burning question begged by the referendum debate is whether the UK can be more politically powerful if it leaves the EU and regains the full status of an independent sovereign state in all matters than if it remains as a large member of a large and powerful political bloc.

It is a truism that a political actor may have more influence by being a member of a powerful group than it has outside it. It gives up power over decisions taken within the group in order to gain the indirect power from belonging to a powerful group: in other words it benefits from the power of combined forces.

This is essentially an empirical question about weighted voting. In order to answer it in the context of the referendum debate we need to be able to compare a measure of the voting power of the UK both inside and outside the EU. We cannot do that exactly because although the EU has defined voting procedures with precise rules for internal decisions there is not a world equivalent voting body for which we can do a formal analysis for external decisions.

We can make some statements however. We can say that there is no a priori reason why – in a world body with a voting rule of one-country-one-vote the UK would not be better off out. In this scenario we might think the EU would have one vote and so would every other country that is not a member. This idea might be applied to international bodies such as the World Trading Organisation. The UK might be better off out because then it would get a seat on the WTO. That does not mean it would actually be more powerful than it is now however since that would depend on the political processes within the WTO. Another example might be the United Nations General Assembly which uses unweighted voting in other words one-country-one-vote but the EU cannot be a member.

International organisations that use weighted voting are many but there is none in which the EU and individual countries can be members that would permit us to make a precise comparative analysis. Nevertheless it is of interest to make an analysis for what we might consider a typical hypothetical voting body.

We consider a generic world body of which the EU is a member along with all other countries that are or could be UN members that are not EU members in which voting weights are proportional to populations. In this body the most powerful members would be China and India with the EU in third place and the USA in fourth, followed by a list of mainly developing countries. Although it is unreal it might be thought to be a template that would enable us to get a perspective on the structural effects of Brexit. I offer it on the basis that some information is

better than none. That an approximate answer to a general question is better than precisely nothing.

I use a similar method to that of Coleman (1973) and Leech and Leech (2008) for comparing the voting power of a member of a group within a larger collective. The power of the member country is the indirect power it has in a two-stage decision process which can be obtained by composing two power analyses. The first stage is the power the member has within the group, the second the power the group has within the larger voting body. We can obtain the voting power of the UK within the EU using the Lisbon dual-majority rules for decisions taken by qualified majority voting. The power of the EU in the world is approximated by an analysis of the hypothetical weighted voting body that we are assuming. The calculations are done using a specially written programme for the Lisbon rules and using the website Leech and Leech (2005) for the world voting body.

For each body we do a voting power analysis to find the Penrose power index, as the probability of the country being decisive in a majority vote. The probability that an EU member country being indirectly decisive is then the product of these two. The voting power indices (also known as Banzhaf or Penrose-Banzhaf indices) are then obtained by normalising these numbers to sum to 100% so that they give a distribution of voting power. In such an a priori analysis these probabilities are independent: in real life this approach would not produce positivist measures of actual voting power because the assumptions that country-by-country voting is independent is obviously untrue.

Results:

Chart 1 shows the main result. It allows a direct comparison of voting power of all the EU member countries before and after Brexit. The first calculation assumes the present EU of 28 countries that is a voting member of a hypothetical world voting body which makes decisions by simple majority with each country's voting weight being its population. The second calculation assumes a smaller EU voting as a block alongside an independent UK. The weight of the EU has been cut by the UK population. Decision making in the EU made by the Lisbon rules with suitably altered majority quotas. A qualified majority decision requires a dual majority of 65% of the population and 55% of member countries voting in favour. Thus when there are 28 members, the 55% quota falls from 16 to 15 countries with 65% of the total population of members. The data consisting of the normalised power indices within a voting body for the world in which there are two stages for the EU members is shown in Table 1. I have not shown the Penrose indices nor the normalised voting power indices for the other countries.

For each country Chart 1 shows its population and its voting power indices before and after the change. The UK clearly loses voting power substantially by leaving. All EU members have more voting power than their share of population and that remains the case after the change. But the power index for the UK falls almost to its population share. The other interesting finding is that the five large countries – all of which have power below their population weight under the

Lisbon Treaty voting rules, all gain substantially in voting power despite the fact that the EU has become smaller and less powerful in the world voting body. All other member countries lose a bit of voting power but they all retain a lot more voting power than their population share. We could loosely say that all EU members continue to punch above their weight in the world but the UK no longer does.

Chart 1: World powers of EU members in 2-stage voting structure (in %)

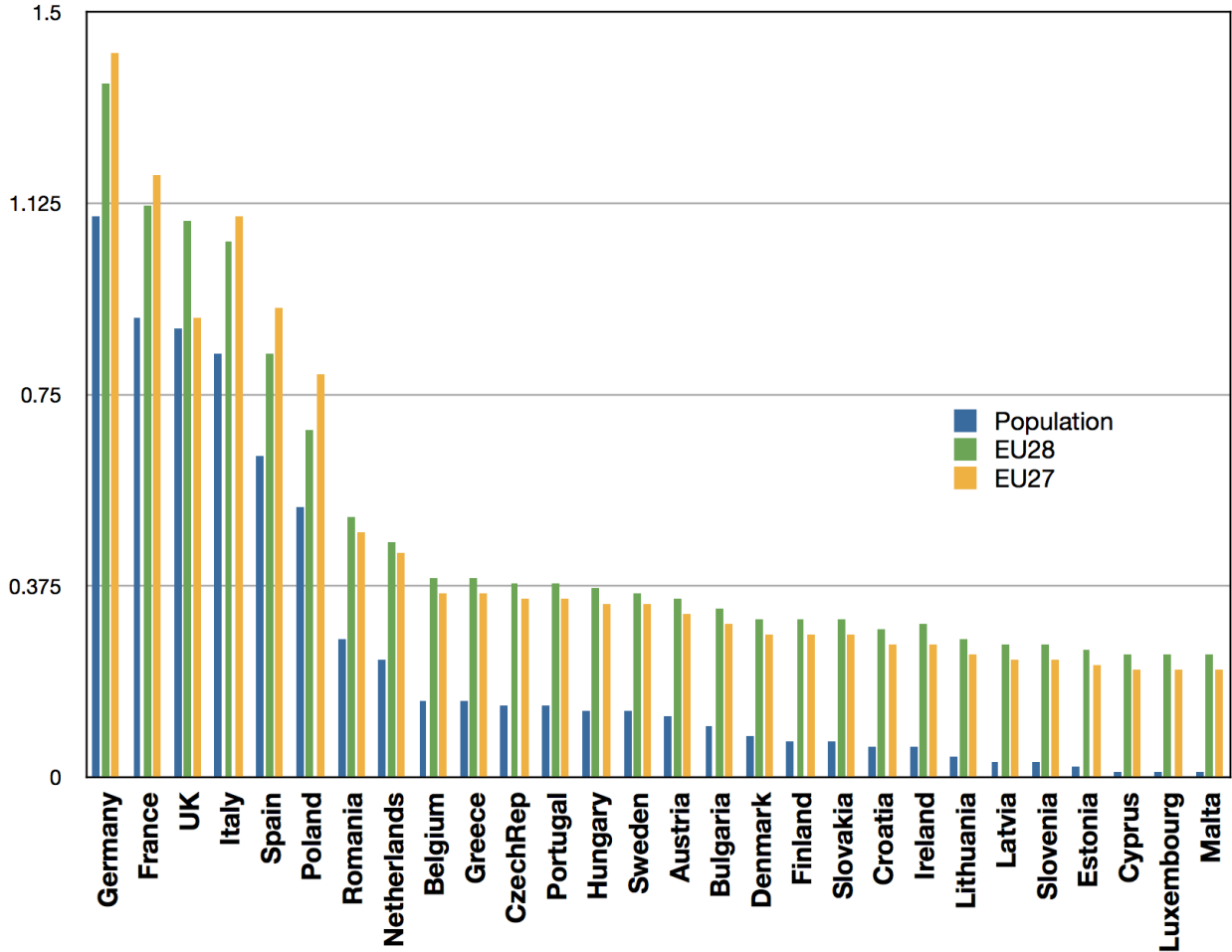


Table 1 World powers and populations of EU members (%) in 2-stage voting structure

	Population	Power index (with EU28)	Power index (with EU27)
Germany	1.1	1.36	1.42
France	0.9	1.12	1.18
UK	0.88	1.09	0.9
Italy	0.83	1.05	1.1
Spain	0.63	0.83	0.92
Poland	0.53	0.68	0.79
Romania	0.27	0.51	0.48
Netherlands	0.23	0.46	0.44
Belgium	0.15	0.39	0.36
Greece	0.15	0.39	0.36
CzechRep	0.14	0.38	0.35
Portugal	0.14	0.38	0.35
Hungary	0.13	0.37	0.34
Sweden	0.13	0.36	0.34
Austria	0.12	0.35	0.32
Bulgaria	0.1	0.33	0.3
Denmark	0.08	0.31	0.28
Finland	0.07	0.31	0.28
Slovakia	0.07	0.31	0.28
Croatia	0.06	0.29	0.26
Ireland	0.06	0.3	0.26
Lithuania	0.04	0.27	0.24
Latvia	0.03	0.26	0.23
Slovenia	0.03	0.26	0.23
Estonia	0.02	0.25	0.22
Cyprus	0.01	0.24	0.21
Luxembourg	0.01	0.24	0.21
Malta	0.01	0.24	0.21

Chart 2 allows us to better understand the components of change. It shows the voting power analysis of the EU Council (or Council of Ministers, EUCM) under the Lisbon rules, before and after the UK leaves. The detailed figures are in Table 2. Germany, France, Italy, Spain and Poland all gain substantially while there is little effect for all the smaller countries. Germany's voting power index goes from 10.2 to 11.9 percent, France's from 8.4 to 9.9. The largest relative increases are for Poland and Spain, at 29 and 24 percent respectively.

Chart 3 shows the power indices for the other stage of the assumed 2-stage voting rule, a hypothetical world voting body, taken as a single legislature. The world voting body is taken as comprising all the countries listed by the United Nations plus the EU minus its members. Only the largest countries are shown. Decision making is by weighted voting with population weights

and a simple majority decision rule. There are two very large voters, China with 18 percent of the world population and India with 17 percent of the weight. Next is the EU with 6.9 percent for EU28 falling to 6.01 percent without the UK, then the USA with 4 percent. Interestingly the voting power indices for China and India are both less than population. This is a typical result for a voting body with two large blocs. The voting power of the EU is above its population share, 8.48 for EU28, and 7.25 for EU27. The voting power of the UK is only slightly greater than its population share.

Conclusion

This indicative analysis suggest strongly that the UK would lose voting power if it left the EU. One of the effects would be to increase somewhat the voting power of the other five larger member countries.

Chart 2: EUCM Voting Power indices under Lisbon Treaty voting rule (in %)

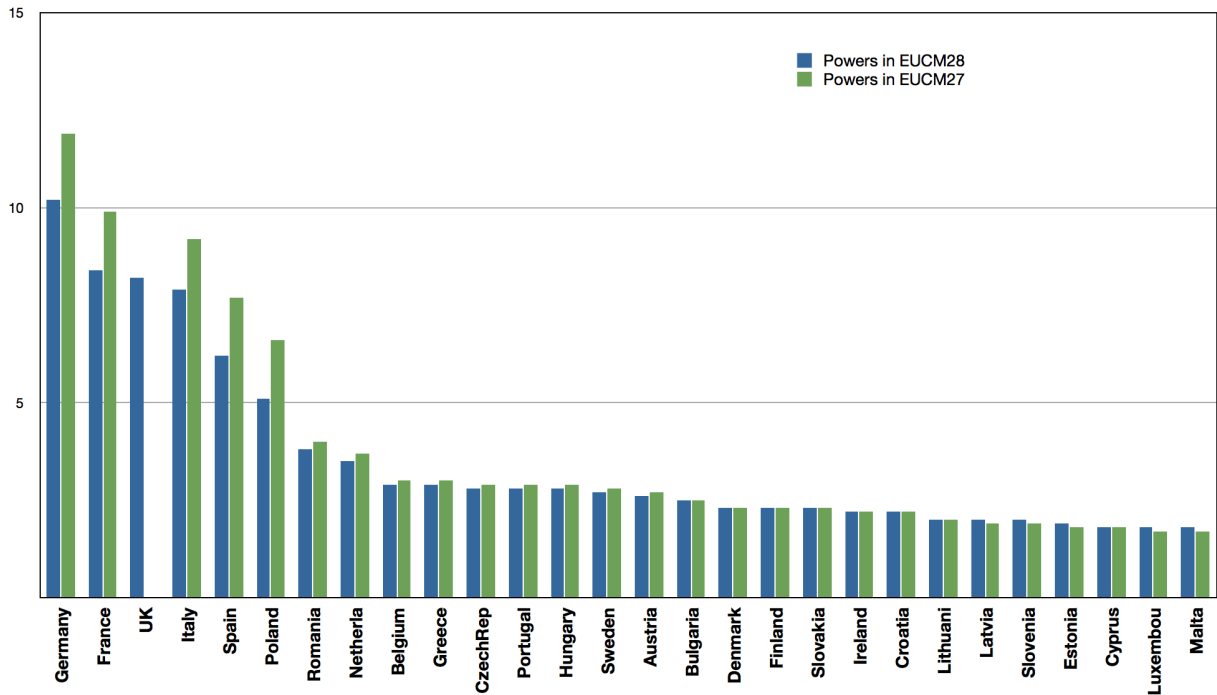


Table 2: EUCM Lisbon Treaty voting power changes from Brexit

	Power28	Power27	%Change
Germany	10.2	11.9	16.67
France	8.4	9.9	17.86
UK	8.2	0	-100.00
Italy	7.9	9.2	16.46
Spain	6.2	7.7	24.19
Poland	5.1	6.6	29.41
Romania	3.8	4	5.26
Netherlands	3.5	3.7	5.71
Belgium	2.9	3	3.45
Greece	2.9	3	3.45
CzechRep	2.8	2.9	3.57
Portugal	2.8	2.9	3.57
Hungary	2.8	2.9	3.57
Sweden	2.7	2.8	3.70
Austria	2.6	2.7	3.85
Bulgaria	2.5	2.5	0.00
Denmark	2.3	2.3	0.00
Finland	2.3	2.3	0.00
Slovakia	2.3	2.3	0.00
Ireland	2.2	2.2	0.00
Croatia	2.2	2.2	0.00
Lithuania	2	2	0.00
Latvia	2	1.9	-5.00
Slovenia	2	1.9	-5.00
Estonia	1.9	1.8	-5.26
Cyprus	1.8	1.8	0.00
Luxembourg	1.8	1.7	-5.56
Malta	1.8	1.7	-5.56
Total	99.9	99.8	

Chart 3: Voting powers in a world voting body with and without Brexit (selected countries) (%)

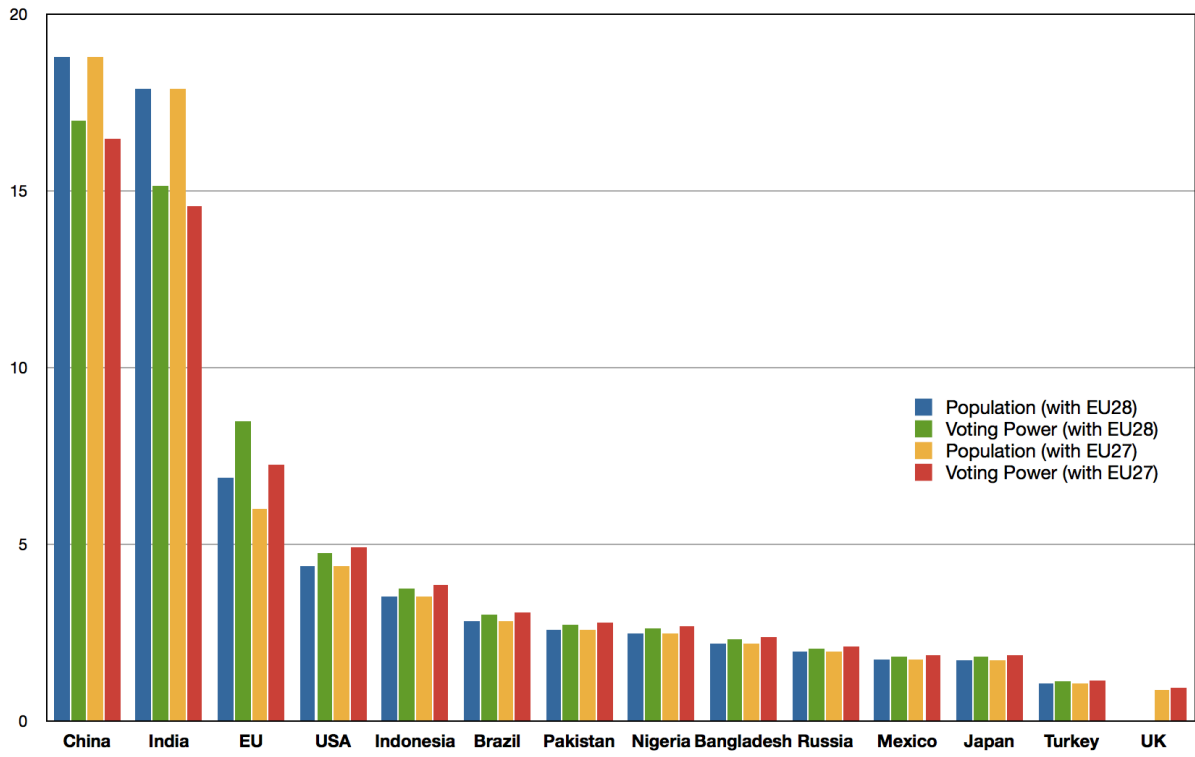


Table 3: Voting powers in a hypothetical world voting body with EU28 and EU27 (205 countries as defined by the United Nations; results for only largest countries shown; %)

	World voting body with EU28			World voting body with h EU27 + UK		
	Population	Voting power	ratio	Population	Voting power	ratio
China	18.78	16.99	0.90	18.78	16.47	0.88
India	17.90	15.14	0.85	17.90	14.57	0.81
EU28	6.90	8.48	1.23	-	-	-
EU27	-	-	-	6.01	7.25	1.21
USA	4.39	4.75	1.08	4.39	4.91	1.12
Indonesia	3.52	3.76	1.07	3.52	3.86	1.10
Brazil	2.84	3.01	1.06	2.84	3.08	1.09
Pakistan	2.58	2.73	1.06	2.58	2.79	1.08
Nigeria	2.49	2.63	1.06	2.49	2.69	1.08
Bangladesh	2.20	2.32	1.05	2.20	2.37	1.08
Russia	1.96	2.06	1.05	1.96	2.11	1.08
Mexico	1.73	1.82	1.05	1.73	1.86	1.07
Japan	1.73	1.81	1.05	1.73	1.85	1.07
Philippines	1.37	1.44	1.05	1.37	1.47	1.07
Ethiopia	1.36	1.42	1.05	1.36	1.45	1.07
Viet Nam	1.28	1.34	1.05	1.28	1.37	1.07
Egypt	1.25	1.31	1.05	1.25	1.34	1.07
Iran	1.08	1.13	1.05	1.08	1.15	1.07
Turkey	1.07	1.12	1.05	1.07	1.15	1.07
DR Congo	1.05	1.10	1.05	1.05	1.13	1.07
Thailand	0.93	0.97	1.05	0.93	0.99	1.07
UK	-	-	-	0.88	0.94	1.07
South Africa	0.74	0.78	1.05	0.74	0.79	1.07
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