Executive summary

- **The United Kingdom's** departure from the European Union will have implications for

bruegel

1 I . .

As the United Kingdom leaves the European Union, one issue for the EU to resolve is the implications of the departure for the European Parliament. Currently, 73 members of the European Parliament (MEPs) are elected in the UK, but the UK is likely to have left the EU by the time of the next European elections in 2019. is raises the question of whether these 73 seats should be dropped or reallocated to the remaining 27 EU countries. And if they are to be reallocated, how should it be done? How will the European Parliament change without the UK?

Even before the UK's Brexit referendum, the Council of the European Union in 2013 called on the European Parliament to make a proposal in time for the 2019-24 parliamentary term for the allocation of seats to EU countries "*in an objective, fair, durable and transparent way, translating the principle of degressive proportionality*,"[1] with 'degressive proportionality' meaning that more populated EU countries have more citizens per MEP than their less-populated counterparts. Prior to the UK Brexit vote, the European Parliament itself called for a reform to increase equality of representation[2].

Brexit o ers a unique political opportunity to revive the discussion on the distribution of seats and to reassess the resulting political and geographical balance in the parliament. e current distribution of seats is the result of long political negotiations and represents a compromise. e departure of one of the largest EU countries means there is new opportunity for political compromises on the composition of the European Parliament.

We explore di erent possible distributions of seats in the European Parliament after Brexit. In particular, we present two options that ful l the requirements of the EU treaties, in particular on minimum and maximum thresholds and degressive proportionality, but that also aim to achieve the greatest possible equality of representation, as demanded by the European Parliament within the treaty constraints. We analyse the implications of those changes in terms of degressive proportionality, equality of representation, number of seats per country, and possible impact on the share of seats of the political groups in the European Parliament[3]

2 ? ?

e allocation of European Parliament seats to countries has a number of implications. An obvious point is that di erent weights for di erent countries imply di erent distributions of

1 4 2
2013 14 .
2 "*citizenship of the Union and electoral equality*".
201
"*providing for the greatest possible degree of electoral equality and participation for Union citizens.*"
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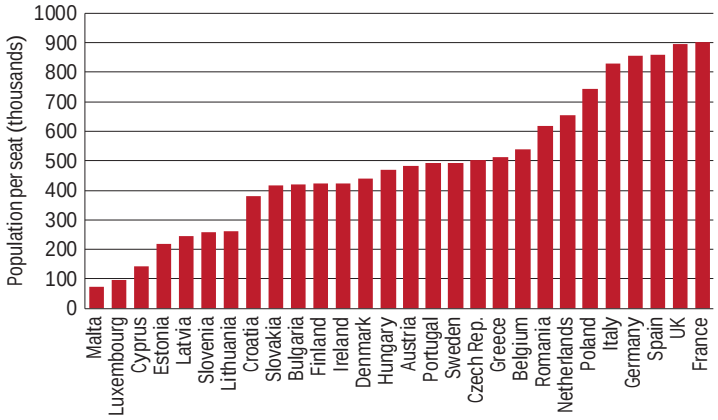
discuss the advantages and shortcomings of the rulings of the German court, but it is important to keep in mind that the Court's decision constrains German institutions in a number of respects, and plays a major role in the constitutional and political debate in Germany and elsewhere on the legitimacy of the European Parliament.

F 1: EU MEP



Source: Eurostat, European Parliament.

the recommendations of the group of mathematicians that proposed the Cambridge Compromise, but rather opted for a "*pragmatic solution*". Instead of following the Cambridge Compromise, the pragmatic solution meant that seats were distributed according to the principle that no state should gain seats and none should lose more than one.

4 T [illegible] E [illegible] P [illegible]

e EU treaties specify the distribution of seats in the European Parliament. e minimum number of seats a country can have is six, and the maximum is 96, with a total of 751 (750 plus a president).

In line with the principle of degressive proportionality, the number of citizens per MEP increases with the size of the country, meaning citizens of smaller EU countries are over-represented relative to their counterparts from large countries. Degressive proportionality thus implies inequality of representation. We de ne equality of representation to mean that the population per MEP would be the same for all countries.

Figure 2 shows how the principle of degressive proportionality has been implemented. is implementation is the result of a compromise reached on 13 March 2013 (European Parliament, 2013).

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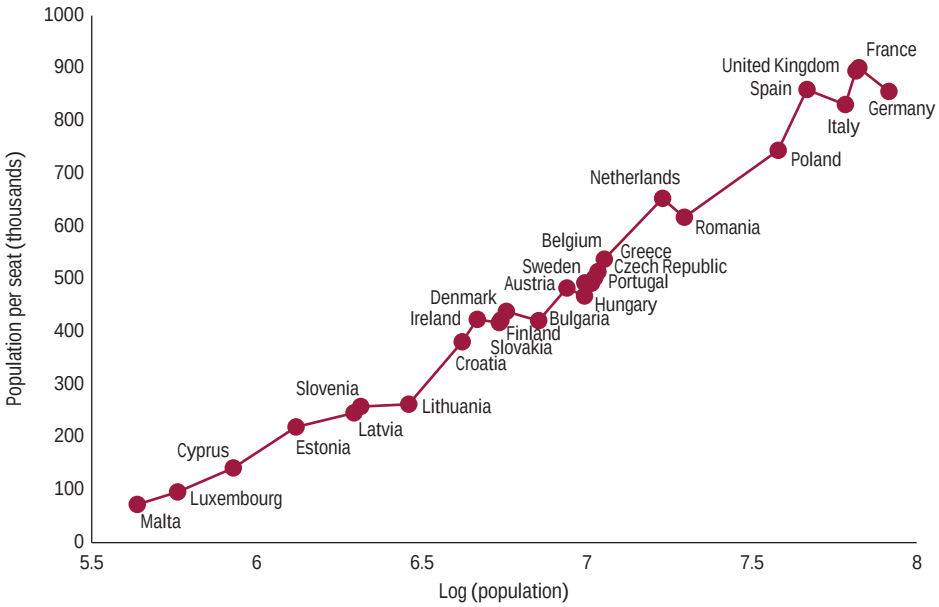


Source: Bruegel based on Eurostat, European Parliament. Note: Population represented per MEP over the logarithm of population.

As Figure 2 shows, the degressive proportionality requirement is broadly ful lled because the curve slopes upward. However, there are deviations. For example Slovakia has a larger population than Ireland, but a smaller population per MEP than Ireland. However, these deviations are quite small. In many cases, they can be explained by rounding: after all, it is not possible to have half an MEP. But in some instances, the treaty requirements are, in fact, not ful lled because of the *ad-hoc* nature of the allocation of seats in the compromise of 2013.

But how does the allocation of seats in the European Parliament compare to other legisla-

tures in terms of equality of representation?

Table 1 shows indicators of equality of representation for the European Parliament compared to the US, the UK, Germany, France and Italy (for charts, see the Annex). In this group, the European Parliament is by far the most unequal. When equality of representation is measured using a version of the Gini coe cient[5] (with a score of zero meaning perfect equality while a score of 100 would imply that all seats go to one country), the European Parliament's score is 17.5 compared to only 2.2 in the US House of Representatives or 3.4 in the Bundestag. France and the UK have the highest Gini coe cients in our group but at about 6 in each case, their values are still only a third of the European Parliament value.

Another measure is the coe cient of malapportionment[6], which measures the percentage of seats that would need to move in order to achieve equality. On this indicator, the European Parliament scores 14 percent, more than three times the score of the worst performing national parliaments in our sample, which are the UK and France.

T . 1: E

(2014)	2014	1	1 . %	14.3 %
(201)		43	2.2%	1.42%
(2013)		31	3.4%	2.4 %
(201)		0	.1%	4.2 %
(2013)		30	2. %	1. 4%
(2012)			.4%	4. 4%

Source: Bruegel based on European Parliament, Eurostat, Destatis, Bundestag, US Census, UK The Electoral Commission, Ministero Dell'Interno (Italy), Ministère de l'Intérieur (France). Note: Malap. = coe□cient of malapportionment.

5 R EU

e 73 MEPs from the UK could be reallocated in various ways, and reallocation should ideally be done in time for the 2019 European Parliament elections.

e simplest approach would be to reduce the number of MEPs by 73. After all, the UK will have left the EU, the EU budget will have shrunk and parliamentarians cost taxpayers money. We calculate that the cost per MEP to the taxpayer is €554,881 per year[7]. In line with

The Gini coef cient is used by a number of authors in the literature that assesses equality of representation of parliaments. See for example: Rose (2012), Tailor and Véron (2014).

This indicator is also frequently used in the literature, see for example, Charvát (2015), Samuels and Snyder (2001). Other indicators can be used but they do not change the broad message (see the Annex).

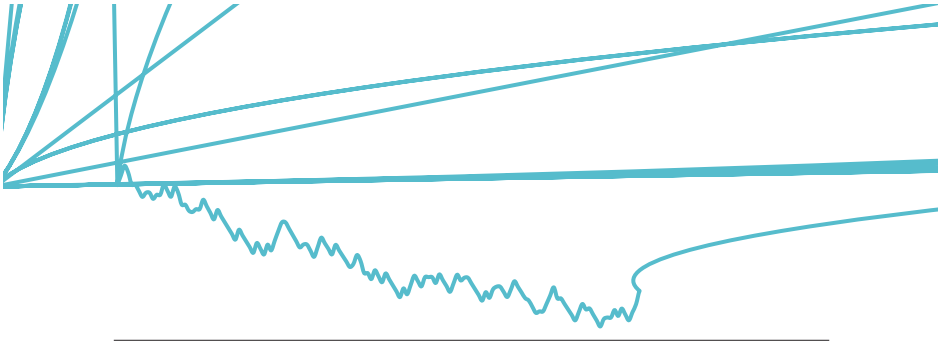
About 22 percent of the European Parliament' Other γ x p ɪ ȳ l o

B 1: C E P

e core recommendation of the Cambridge Apportionment Meeting was a method of distributing seats to member states termed 'Base+prop method' (Grimmett *et al*, 2011). In a rst stage, a xed base number of seats is allocated to each country, ie ve seats. In the second stage, the remainder is distributed proportionally to population sizes with upwards rounding. e recommended method is a compromise that follows the principle of equality among states with the base number of seats, and the principle of equality among citizens by the proportional part.

For a given minimum and maximum number of permissible seats per state, the method can be used to determine a parliament size that minimises inequality. While a large parliament would mean that several countries hit the upper limit of seats, a low total number of MEPs would lead to more overrepresentation of countries at the lower limit. Figure 3 shows this U-shaped relationship with the percentage of malapportionment and the Gini index for each parliament size using the 'Base+prop' method.

F 3: I E P C C



Source: Bruegel.

e parliament sizes that would minimise the Gini score and malapportionment are 639 and 736, respectively. e Gini is more sensitive to under/over-representation of individual countries, in particular in the middle of the distribution, while malapportionment quanti es the percentage of seats that would need to move to achieve a proportional distribution. We also used other measures of inequality of apportionment but the optimisation results were either close to the malapportionment measure or the Gini coe cient measure (see the Annex).

Table 3 shows the number of seats currently allocated to the EU countries except the UK, and the allocations at optimal parliament sizes: rst with a total of 639 seats (which would minimise inequality as measured by the Gini coe cient), and second with a total of 736 seats (which would minimise the degree of malapportionment).

T . 3: A EU C C P
639 736

	. %		%		%		. /		%		. /
	1 . %		14.2%		1 .0%		4		13.0%		4
	1 .0%	4	10. %		12.4%	+	43 1		13.0%	+ 22	43 2
	13.%%	3	10. %	3	11.4%		3103		12.1%	+ 1	1 3
	10.4%	4	.0%		. %	+ 3	14 0	0	. %	+ 1	340
	. %	1	. %	4	.4%	- 4	0 13		. %	+	4 0
	4.4%	32	4. %	2	4.2%	-	31 1	33	4. %	+ 1	
	3. %	2	3. %	24	3. %	- 2	0 43	2	3. %	+ 3	4
	2. %	21	3.1%	1	2. %	- 3	2 214	21	2. %		3 12
	2.4%	21	3.1%	1	2. %	- 4	*634913*	20	2. %	-1	*539676*
	2.4%	21	3.1%	1	2. %	- 4	20 14	20	2. %	-1	2 2
	2.3%	21	3.1%	1	2. %	- 4	0 314	20	2. %	-1	1 0
	2.2%	20	2. %	1	2. %	- 4	*615689*	1	2.%%	-1	*518475*
	2.2%	21	3.1%	1	2. %	-	*614405*	1	2.%%	-2	*517394*
	2.0%	1	2. %	1	2.3%	- 3	0031	1	2.4%		4 330
	1.%%	1	2. %	13	2.0%	- 4	02 1	1	2.0%	-2	4 1
	1.3%	13	1. %	12	1. %	- 1	4 04	13	1. %		43 01
	1.2%	13	1. %	12	1. %	- 1	4 2	13	1. %		422101
	1.2%	13	1. %	12	1. %	- 1	4 21	13	1. %		41 404
	1.0%	11	1.%%	11	1. %		423 03	12	1.%%	+ 1	3 211
	0. %	11	1.%%	10	1.%%	- 1	41 0	11	1. %		3 0 0
	0.%%	11	1.%%		1.4%	- 2	320 1		1.2%	-2	320 1
	0. %		1.2%		1.3%		2 024		1.1%		2 024
	0.4%		1.2%		1.3%		24 120		1.1%		24 120
	0.3%		0. %		1.1%	+ 1	1 2		1.0%	+ 1	1 2
	0.2%		0. %		0. %		1413		1.0%	+ 1	1211
	0.1%		0. %		0. %		042		0. %		042
	0.1%		0. %		0. %		2401		0. %		2401
Total	**100%**	**678**	**100%**	**639**	**100%**	**- 39**		**736**	**100%**	**58**	

Source: Bruegel based on Eurostat, European Parliament. Note: European Parliament apportionment of seats for EU27 at 1) current distribution, 2) Cambridge Compromise method with a total of 736 and 3) Cambridge Compromise method with a total of 639 seats. The table shows share of population, number of seats in each scenario, share of seats in the EP, di erence to current allocation and population-to-seats ratio. Population-to-seats ratios which are not strictly increasing with population are italicised.

In a European Parliament of 27 countries with 639 seats, France, Italy and Estonia would gain seats, eight countries would be una ected and 16 would receive fewer seats. Although Germany's number of MEPs would not change, its share of the European Parliament total would increase by 2.2 percentage points (see Table A1 in the Annex for current allocation). Romania and Hungary would lose the most, with ve fewer seats each. However, Romania's share of the seats in the European Parliament would be unchanged, and Hungary's share would be 0.3 percentage points lower. e ratio of population to seats would be the same or would fall in three instances. is is in accordance with the current de nition of degressive proportionality, which requires the proportion of population to seats to increase before rounding. e apparent deviation from degressive proportionality is thus only a result of the fact that there can be no shared MEPs across countries.

is 639-seat option would decrease the inequality of representation in the European Parliament by almost 20 percent. At the extremes, France, which currently has the largest number of people per MEP, has 12.4 times more people than the country with the lowest number of MEPs, Malta. In a 639-seat parliament, that multiple would fall to 11.8. e minimisation of inequality of representation as measured by the Gini coe cient would thus lead in particular to an adjustment for the countries in the middle of the range – while the constraint of a minimum of six and a maximum of 96 seats prevents adjustments for the smallest and largest countries. In other words, the EU treaty limits the reduction of inequality that can be achieved. Nevertheless, the reduction of inequality would lead to a Gini coe cient that would at least be somewhat closer to the levels of inequality of representation in the French and UK parliament, even though it would still be more than twice as large than in both cases.

Distributing seats according to the Cambridge Compromise in a Parliament with 736 seats, a third of countries would gain and seven countries would receive a smaller number of seats. France, as the currently most underrepresented country, would receive the largest number of additional MEPs (22) followed by Italy (16) and Spain (16). e countries that would lose seats are Portugal, Sweden, Greece, the Czech Republic, Hungary, Bulgaria and Lithuania. e losses in terms of shares of total European Parliament seats would be below 0.3 percentage points compared to current shares.

In this option, the 73 UK seats can, thus, be used to increase the equality of representation of citizens in the European Parliament – reducing the measure of malapportionment – while limiting the loss of seats to a minimum. In three cases – Greece, Hungary and Sweden – the ratio of population to seats would not increase for more populous countries. e EU treaties again limit the adjustment for the smallest and for the largest member states. Nevertheless, one can achieve a reduction of the extent of malapportionment that makes the European Parliament somewhat more comparable to the French and UK parliament, even though inequality would still be more than twice as large, respectively.

Finally, we simulate the Andrew Du proposal to create a transnational list to which the 73 UK seats would be allocated. is would require EU treaty change and is therefore unlikely to be implemented but, since it is discussed in Brussels, we want to show its e ects on inequality and malapportionment. As Table 2 shows, the option would also substantially decrease inequality. However, we note that if treaty change is an option, much more signi cant changes in electoral equality could be achieved. e interested reader can explore various options that would drop various EU treaty constraints via an online tool that accompanies this Policws, the option wo

T . 4: P E P 2014

	21	2 . %	21	32.0%	203	31. %	232	31.%
	1	2 .2%	1	24. %	1	24. %	1 3	24. %
	4	. %	3	. %	4	. %		%
		.1%		. %	3	. %	2	. %
	2	. %	1	. %	4	. %		. %
	0	. %	44	. %	42	%	4	.4%
	44	. %	24	3. %	23	3.%	2	3. %
	3	.2%	3	%	3	. %	4	.2%
	1	2.4%	1	2.2%	13	2.0%	1	2.1%
Total	**751**	**100%**	**678**	**100%**	**639**	**100%**	**736**	**100%**

Source: Bruegel. Note: Distribution of seats across political groups 1) currently, 2) without the 73 British MEPs, 3) at a Cambridge Compromise allocation with 736 seats and 4) with 639 seats. The number of seats in the latter two scenarios are approximated using voting patterns from the 2014 parliamentary election.

6 C

e departure of the UK from the EU o ers a political opportunity to change the number and allocation of seats in the European Parliament. e European Parliament has itself called for a reassessment and for greater equality of representation. A straightforward option would be to drop the 73 seats currently allocated to the UK – this would also be a cost saving option, but it would increase electoral inequality. Another option would be to share out some of the seats between EU countries. Our two scenarios for optimal redistribution would reduce inequality of representation in the European Parliament, as measured by the Gini coe cient and the malapportionment coe cient, within the constraints of the EU treaties. In these scenarios, the number of European Parliament seats would shrink by 112 or 15.

We consider it important to reform the parliament to increase equality of representation with a view to increase its legitimacy as a parliament representing EU citizens equally. At a time when the EU budget will shrink and scepticism about EU institutions is high, the EU should carefully explore our options. It should also consider whether a smaller parliament would be more e cient. However, within the constraints of the Treaties, only limited increases of equality are possible so that our reform options will not fully settle the debate. With a treaty change, equality of representation could be achieved that would render the

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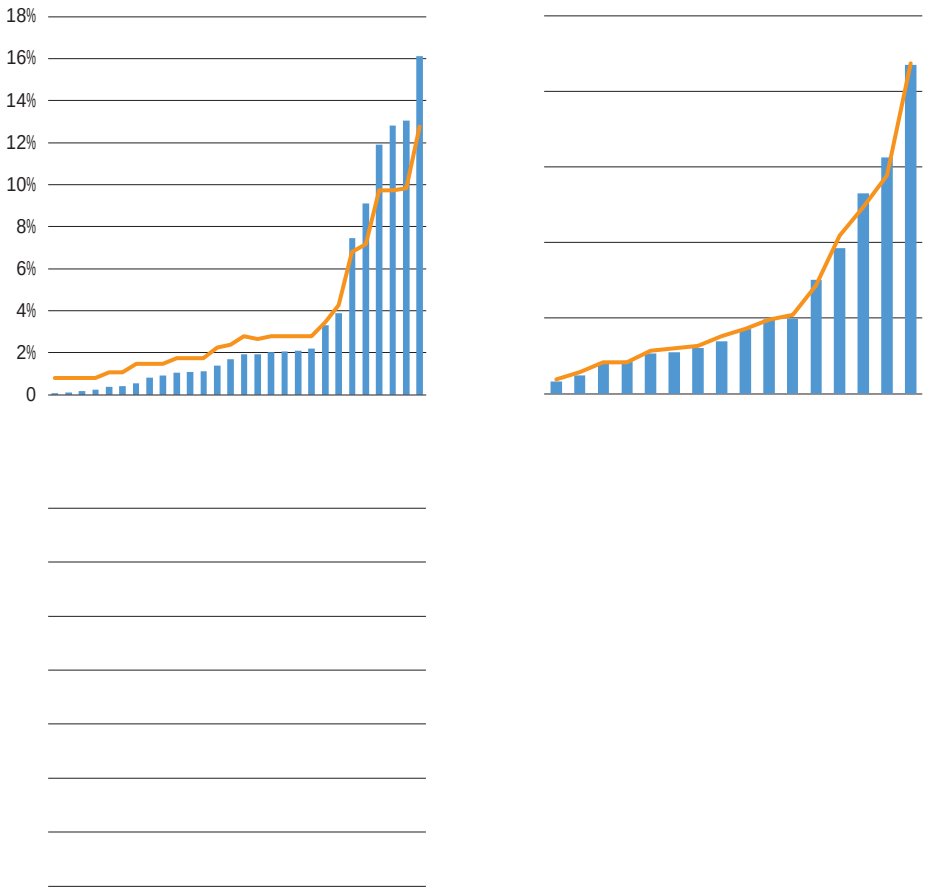
F A1: T E P



Source: Bruegel.

T . A1: A E/ P

Country	Pop. %	Seats	%	Pop./seats		
	1 .1%		12. %	, 4		
	13.1%	4	. %	00, 33		
	12. %	3	. %	,0		
	11. %	3	. %	31,03		
	.1%	4	.2%	, 1		
	.4%	1	. %	44,4		
	3. %	32	4.3%	1 ,4		
	3.3%	2	3. %	3,043		
21 ( )	2.2%	21( )- ('	3. %	3 ,12		
	2.1%	21	2. %	13,		
	2.1%	21	2. %	02, 4		
	2.0%	21	2. %	4 2,444		
	1. %	20	2. %	4 2, 1		
	1. %	21	2. %	4 ,11		
	1. %	1	2.4%	4 3,3 0		
	1.4%	1	2.3%	420, 11		
	1.1%	13	1.4%	43 ,01	1. %	43 ,01

639 or 739. e class of indicators including Loosemore-Hanby specify a linear penalty for di erences to proportionality while the class including the Gini have a larger penalty for deviations.