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Strength in Numbers?

Representation and Redistribution in the European Union

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ABSTRACT

This paper examines the relationship between territorial representation and fiscal redistribution in the European Union. Given that small states are vastly overrepresented in both the European Parliament and the Council of Ministers, models of legislative vote-buying predict that overrepresented member states will be systematically favored in the distribution of EU fiscal transfers. Empirical analysis of each manifestation of the EC or EU from 1977 to 1999 reveals a strong linear relationship between votes and transfers per capita during each period. This is true for both agricultural and regional development transfers as well as total net transfers. The paper concludes by reflecting on the importance of the connection between representation and redistribution as the European Union prepares to enlarge.

KEY WORDS

- federalism
- representation
- redistribution
- vote-buying
- transfers

Introduction

From Philadelphia in 1787 to Nice in 2000, the apportionment of votes among territorial units is the most contentious stumbling block in the negotiation of voluntary federal bargains. The fault lines are predictable: small states fight for unit representation, while large states prefer population-based representation. The compromise reached in Philadelphia is now a standard feature of virtually all of the world's federations: the creation of a population-based lower chamber and a territorial upper chamber. In order to achieve the collective goods associated with integration – common defense, free trade, or perhaps a common currency – the large states find it necessary to assuage the fears of the small states by giving them disproportionate influence in a strong territorial upper chamber.

From the beginning, the large states in the European Community – most notably Germany – have explicitly sacrificed voting power in EU institutions in order to establish their commitment to integration and assuage the fears of smaller states. Successive enlargements of the Union – which have brought in seven new small states and only two new large ones – have shifted representation even further in favor of small states. The enlargement addressed by the Nice summit will also be dominated by relatively small countries. However, the willingness of large states to sacrifice their voting strength in order to achieve further integration appears to have reached its limit at Nice, provoking consternation and brinkmanship from small states such as Belgium and Portugal. Transcripts reveal that squabbling over voting weights in the Council of Ministers nearly scuttled the agreement several times.¹

It is not surprising that Germany in particular, which pays nearly US\$13 billion more to the EU than it gets back in benefits and has the fewest votes per capita in both the Parliament and the Council, would draw a connection between representation and redistribution. Chancellor Schröder has declared Germany's unwillingness to 'solve Europe's problems with the German checkbook' – a position intimately linked with Germany's insistence on moving closer to population-based representation.

Schröder's implicit connection leads to an empirical question: to what extent does the nature of territorial representation drive fiscal redistribution? Are overrepresented member states systematically favored in the distribution of EU fiscal transfers? By examining the distribution of transfers between the member states of the European Union over time, this paper attempts to establish exactly how much is at stake in fights over political representation.

The answers may have important implications for the post-Nice future. Some of the thorniest issues on the road ahead include the reform of

agricultural and regional development subsidies after several new rural, poor countries are admitted to the Union. Moreover, European 'fiscal federalists' argue that the European Monetary Union and its Stability Pact, if enforced, require a much larger tax base for Brussels and a broader system of inter-regional risk-sharing and redistribution along the lines of continental currency unions such as the United States and Canada. The results of this study suggest that the ability to achieve consensus on such reforms – and their likelihood of success – will almost certainly be wrapped up in continuing conflicts over representation.

The motivation for this analysis springs not only from its potential importance for the future of European fiscal federalism, but also from its potential to contribute to a nascent comparative literature on representation and redistribution. Perhaps the most obvious comparison is with the United States, where each state – from Rhode Island to California – has two senators. Studies by Atlas et al. (1995) and Lee (1998) find evidence that expenditures and net transfers per capita are significantly greater in smaller, overrepresented states. Gibson et al. (forthcoming) have discovered much larger overrepresentation effects for expenditures in Brazil and Argentina. The American case is especially interesting because the *Baker vs. Carr* Supreme Court decision mandated a shift from malapportionment to 'one person–one vote' in the US House of Representatives and the state legislatures, which allowed researchers to examine the effects of changes in apportionment over time. McCubbins and Schwartz (1988) found that the shift led to redistribution from rural to non-rural congressional districts. Ansolabehere, Gerber, and Snyder (2001) found that transfers from states to counties favored overrepresented districts prior to redistricting, and counties that lost seats subsequently received a smaller share of state funds per capita.

The European Union should provide an especially useful case for comparative analysis. Small states are rather severely overrepresented in both legislative chambers, and allegiances to federation-wide political parties that might cut against pure regional self-seeking are absent. The next section introduces some data on legislative malapportionment, placing European institutions in a comparative context. The third section explains why a link between representation and redistribution might exist in the first place, and makes some specific arguments about the European Union. The fourth section analyzes the distribution of agricultural and regional development expenditures, total expenditures, and net transfers. Like the other studies cited above, it examines the effect of representation by examining votes per capita in both legislative chambers. Unlike other studies, it also uses indices of voting power. The final section discusses implications, conclusions, and avenues for further research.

EU legislative malapportionment in comparative perspective

Like other federations, the EU has a very strong, highly disproportionate upper house – the Council of Ministers. The EU uses a range of decision procedures and voting weights depending on the issue, and these have changed considerably over time. Starting with unanimity rules in virtually every policy area, the Council of Ministers has slowly increased its use of qualified majority voting (QMV) since the 1980s (Carrubba and Volden, 2000). The lower chamber, the European Parliament, has also gained power over the past two decades, especially in its role as ‘conditional agenda-setter’ in the cooperation procedure (Tsebelis, 1994, 1996) and ‘conditional blocker’ in the co-decision procedure (Schneider, 1995). Of these decision rules, overrepresentation of small states is obviously most pertinent when all states have veto authority in the Council, and least so when changes to the status quo require only a simple majority in the Parliament. Thus as qualified majority voting and parliamentary power grow, it would appear that the power of the small state might be diminishing.

However, the importance of these changes must be placed in proper perspective. Unanimity rules still apply for a wide variety of important legislation. Though expanding, qualified majority voting in the Council applies primarily to legislation on the internal market, agriculture, and the free movement of goods. The extent of disproportionate influence for small states, even under QMV, is striking. It must also be stressed that small states are over-represented in the Parliament as well.

A recent study by Samuels and Snyder (2001) allows one to place these EU institutions in comparative perspective. For a large sample of upper and lower chambers in democracies around the world, Samuels and Snyder calculate legislative malapportionment using the Loosemore–Hanby index of electoral disproportionality as follows:

$$MAL = (1/2) \sum |s_i - v_i|,$$

where s_i is the percentage of all seats allocated to district i , and v_i is the percentage of the overall population residing in district i . I have calculated this index for the EU Parliament and Council of Ministers for each of their manifestations since the EC9, considering each decision rule. Though the Samuels–Snyder data set includes 80 countries, the most natural comparison is with other federations. Table 1 displays the index for each of the federations in the Samuels–Snyder data set and includes averages for the European Parliament and the Council of Ministers from 1995 to 1999 (the Samuels–Snyder data are calculated for 1995–8), under both unanimity and QMV rules.

Table 1 EU legislative malapportionment in comparative perspective

	<i>Lower chamber</i>	<i>Upper chamber</i>	<i>Two-chamber average</i>
Argentina	.141	.485	.313
EU (equal weight in Council)	.115	.459	.287
Brazil	.091	.404	.248
Venezuela	.072	.327	.199
Spain	.096	.285	.191
USA	.014	.364	.189
Russia	.038	.335	.186
Switzerland	.019	.345	.182
EU (QMV rule in Council)	.115	.241	.178
Australia	.024	.296	.160
Mexico	.064	.230	.147
Germany	.034	.244	.139
South Africa	.034	.226	.130
Canada	.076	n.a.	.076
India	.062	.075	.068
Austria	.064	.030	.047
Average, federations	.066	.290	.178
Average, 80 countries	.076	.217	.146

Sources: Samuels and Snyder (1999), Article 148(2) EC, as amended, and author's calculations.

First note that, on average, upper chambers are more malapportioned than lower chambers, especially in federations. Under qualified majority voting, the index of malapportionment for the EU Council of Ministers is roughly similar to the average of all upper chambers in federations. However, when each state is weighted equally, the Council nearly surpasses the Argentine Senate as the world's most malapportioned upper chamber. It is important to note that, in the balance of power between chambers, the Council of Ministers is without a doubt the most powerful upper chamber among the world's federations. Perhaps it is more surprising to note that the European Parliament is the second-most malapportioned lower chamber among the world's federations, and it surpasses the average for the entire 80-country sample (which is dominated by unitary countries).

Table 2 traces out changes in the European Union over time. It shows that, with each enlargement (except for 1986, which included Spain, a large state), the index of malapportionment has increased for each body. Thus, although the move to qualified majority voting and the empowerment of the Parliament represent significant moves in the direction of population-based

Table 2 The effect of successive enlargements on malapportionment in EU legislative institutions

Period	Years	Countries added	Council of Ministers		Parliament
			QMV	Unanimity	
EC9	1973–80		.185	.430	.084
EC10	1981–85	Greece	.207	.442	.095
EU12	1986–94	Spain, Portugal	.206	.421	.100
EU15	1995–99	Austria, Finland, Sweden	.241	.459	.115

Sources: Article 148(2) EC, as amended, and author's calculations.

representation, enlargement has created a countervailing trend towards increasingly disproportionate influence for small states.

The most straightforward way to compare the representation of the member states is by examining the number of votes per capita. Table 3 provides this information for both the Council (underweighted and non-weighted voting) and Parliament. Overrepresented states (where $s_i - v_i$ is positive) are in bold; underrepresented states are in normal font. Not surprisingly, the most overrepresented state by far is Luxembourg, followed by Ireland, and the most underrepresented states are Germany and France.

Though straightforward, this method of comparing member states does not take into account voting rules (e.g. the QMV threshold), and is less useful for tracking changes in apportionment over time. Although a debate about the use of power indices to infer member state bargaining positions has become a contentious cottage industry in EU studies,² for the purposes of this paper, the Shapley–Shubik (SS) Index of voting power is a useful tool for comparing the evolution of voting power over time.³ The SS Index considers all possible coalition permutations. The first voter in a permutation whose vote would make the coalition a winning coalition is the pivotal voter in that coalition, and each permutation has exactly one pivotal voter. A voter's SS Index is the fraction of all permutations for which that voter is pivotal. I have calculated the SS Index for each member state in each voting system since 1973 (EC9, EC10, EU12, and EU15). Table 3 compares each member state for the EU15. In both chambers, Germany, France, Italy, and the UK have the most voting power, but the least voting power per capita.

In order to demonstrate the differential effects of enlargements for different member states, Table 4 shows the evolution of voting power for each member state in the Council under successive qualified majority voting schemes. Of course the general trend is downward since the likelihood of

Table 3 Votes and voting power, EU15, 1995-99

Member State ^a	Council				Parliament				
	QM votes	QM votes/million persons	Voting power, QMV	Voting power/million persons, QMV	Unweighted votes/million persons	Votes	Votes/million persons	Voting power, simple maj.	Voting power/million persons, simple maj.
Austria	4	0.50	.05	.006	0.12	21	2.60	.03	.004
Belgium	5	0.49	.06	.005	0.10	25	2.45	.04	.004
Denmark	3	0.57	.04	.007	0.19	16	3.03	.02	.004
Finland	3	0.58	.04	.007	0.20	16	3.11	.02	.005
France	10	0.17	.12	.002	0.02	87	1.49	.14	.002
Germany	10	0.12	.12	.001	0.01	99	1.21	.17	.002
Greece	5	0.48	.06	.005	0.10	25	2.38	.04	.004
Ireland	3	0.82	.04	.010	0.27	15	4.11	.02	.006
Italy	10	0.17	.12	.002	0.02	87	1.51	.14	.003
Luxembourg	2	4.75	.02	.049	2.38	6	14.30	.01	.020
Netherlands	5	0.32	.06	.004	0.06	31	1.99	.04	.003
Portugal	5	0.50	.06	.006	0.10	25	2.51	.04	.004
Spain	8	0.20	.10	.002	0.03	64	1.63	.10	.003
Sweden	4	0.45	.05	.005	0.11	22	2.49	.03	.004
UK	10	0.17	.12	.002	0.02	87	1.48	.14	.002

Sources: Article 148(2) EC, as amended; OECD Statistical Compendium, and author's calculations.

Notes: Shapley-Shubik indices calculated using IOP ('Indices of Power') 2.0, created by Thomas Bräuninger and Thomas König, <http://www.uni-konstanz.de/FuF/Verwiss/Koenig/IOP.html>

^aOverrepresented states are in bold.

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Table 4 The evolution of voting power among EC9 countries, 1973–99

<i>Member state</i>	<i>Period</i>	<i>Voting power, QMV</i>
Belgium	EC9	.081
	EC10	.071
	EU12	.064
	EU15	.055
Denmark	EC9	.057
	EC10	.030
	EU12	.043
	EU15	.035
France	EC9	.179
	EC10	.174
	EU12	.134
	EU15	.117
Germany	EC9	.179
	EC10	.174
	EU12	.134
	EU15	.117
Ireland	EC9	.057
	EC10	.030
	EU12	.043
	EU15	.035
Italy	EC9	.179
	EC10	.174
	EU12	.134
	EU15	.117
Luxemburg	EC9	.010
	EC10	.030
	EU12	.012
	EU15	.021
Netherlands	EC9	.081
	EC10	.071
	EU12	.064
	EU15	.055
UK	EC9	.179
	EC10	.174
	EU12	.134
	EU15	.117

Note: Shapley–Shubik indices calculated using IOP ('Indices of Power') 2.0 (see Table 3).

being pivotal decreases as more countries are added. But Table 4 is useful because it shows that each enlargement has had different relative winners and losers depending on the size of the countries added and the representation scheme selected. Above all, the large states such as Germany have been

relative losers in each of the last reapportionments, while some small states such as Ireland have retained much of their voting power.

Representation and spending in the European Union

Why might representation affect redistribution?

Protections for small states may be crucial for the formation or enlargement of a voluntary federation, but these protections can make changes from the status quo quite difficult, perhaps even undermining the provision of some of the collective goods that motivated the federal bargain in the first place. When a super-majority or unanimous consent is required for changing the status quo, opportunistic behavior by member states might be costly for the federation as a whole (Scharpf, 1988; Peirce, 1992). Self-interested member states may attempt to exploit the others, aiming for side-payments by threatening to veto even legislation that is welfare improving for a large majority or all of the member states. In particular, if votes are traded and sold, the small states may be in a strong position to exploit the large.

Most formal models of voting in the EU consider one decision at a time; it may be more useful to consider models of logrolling or vote-trading (e.g. Stokman and Van den Bos, 1994; König, 1997; Kirman and Widgrén, 1995). In these models, member states consider multiple policy areas simultaneously and attempt to maximize their expected utility by connecting their voting positions on one issue to their respective positions on other issues. If member state A proposes a policy change that is highly salient for it, member state B – for whom the change is not very salient – might vote insincerely in favor of the proposal in return for A's vote in a separate policy area that is more salient for B. Alternatively, if possible, A might simply buy B's vote by promising to tilt redistribution in B's favor.

If a core group of states strongly prefers a change from the status quo but does not constitute the requisite majority, other states that can credibly claim indifference might hold out and demand extra benefits in exchange for their votes. It is quite reasonable to assume that the coalition-builder will try to build the least expensive coalition possible. Thus of the potential coalition partners whose votes are for 'sale', the small overrepresented states might be very attractive coalition partners. Since they are in effect endowed with more votes per capita than larger states, they can offer good value – more votes can be purchased in exchange for fewer benefits.⁴ Of course, these benefits need not take the form of fiscal transfers – small states might demand special regulatory favors or trade protection for their industries. Nevertheless, fiscal

transfers are a very likely demand, and of course, unlike regulatory benefits, they can be counted and compared over time and across jurisdictions.

Under what conditions might representation affect redistribution?

It is conceivable that redistribution is determined outside the legislative bargaining arena – for instance through need-based formulas or decisions of autonomous commissions. Indeed, in most intergovernmental fiscal systems around the world the distribution of transfers is quite sticky over time, and formulas and eligibility requirements would appear to limit the yearly discretion of policy-makers to target benefits to certain states. Indeed, the distribution of spending in the EU budget, which consists primarily of agricultural and regional development subsidies, is determined largely by coherent eligibility criteria rather than ad hoc discretionary bargaining. Moreover, key parameters of the budget are not amenable to yearly manipulation because of the multi-annual budget plans introduced in 1988 – the so-called ‘Financial Perspectives’.

Nevertheless, as in other federations that appear to have multi-year budget plans and apolitical formulas, the yearly legislative bargaining process still might have an important influence over distribution, and negotiations in the Council leading to the Financial Perspective itself are certainly not insulated from political bargaining.⁵ Member states bargain over the eligibility criteria themselves with a very clear understanding of the distributive stakes. But since the requirements and formulas that determine the distribution of agricultural and structural funds are renegotiated only periodically, one might expect that a non-simultaneity problem might make it difficult to exchange votes directly for transfers in the manner described above. In other words, Luxembourg might vote for a policy favored by France in October in exchange for special treatment in the distribution of agricultural transfers in November, only to find that France reneges on its promise. However, qualitative studies of decision-making in the Council suggest that small numbers of players interacting repeatedly over time and evolving mutual trust might help cement non-simultaneous deals (Hayes-Renshaw and Wallace, 1997; Lewis, 2000). Even if norms, repeated play, and reputational sanctions are insufficient to resolve this problem, overrepresented states might receive disproportionate transfers simply because they are important veto players in the budget process itself. Although the European Parliament has gained an enhanced role as a veto player over decisions about non-compulsory expenditures, the Council makes budgetary decisions using a qualified majority and has the final word on compulsory expenditures. The important role played

by qualified majority voting is advantageous to the small, overrepresented states. Moreover, the multi-annual budget planning process is dominated by the unanimity rule, which is even more advantageous to small states, and decisions are made in lengthy, non-transparent Council meetings that are very conducive to vote-trading.

An important but under-appreciated point is made by Buchanan and Tullock (1962): if a group of states buys a winning coalition in the 'one person-one vote' chamber, it may already have a regional winning coalition in the (malapportioned) upper chamber without needing to buy more votes. Ansolabehere, Snyder, and Ting (2001) formalize and expand upon this logic to show that small states are most likely to benefit from overrepresentation if *both* chambers are malapportioned. This may help explain why Gibson et al. (forthcoming) find a much stronger small-state bias in Argentina and Brazil, which have highly malapportioned lower chambers, than in the United States and Mexico. Recall from Table 1 that both of the EU's legislative chambers are among the most malapportioned; thus one might expect the relationship between representation and redistribution to be especially clear in the EU.

One might doubt the applicability of pure vote-buying models based on regional interests in the real world because political parties often create cross-cutting bases for coalition-building. As in the German *Bundesrat* or Australian Senate, for instance, regional self-interest might sometimes give way to party discipline (Bräuninger and König, 1999; Rodden, 2001). If transfers are used to buy votes, perhaps they will be distributed along party lines. However, this complication does not arise in the Council of Ministers, which lacks anything resembling disciplined, federation-wide political parties that would exert pressure on ministers or MPs when voting on issues such as subsidies. A recent study of roll-call voting under the cooperation procedure in the European Parliament by Kreppel and Tsebelis (1999) does show that the ideological groupings in the EP are more effective than country or region in predicting coalition patterns.⁶ But this certainly does not mean that the EP is a traditional parliament with disciplined political parties that obviate the temptation to buy votes. On the contrary, the lack of a government-opposition dichotomy means that, as in a presidential system with weak party discipline, a variety of coalitions are possible and they shift from issue to issue.

In general, there are good reasons to be skeptical about pure vote-buying models of coalition-building. Money is not the only glue that binds coalition members; in addition to party discipline, regional and ideological affinities are used as well. As a result, the assumption that all coalitions are equally likely to form – which drives pure vote-buying models and quantitative power indices alike – will rarely be valid in the real world. In addition to a

nascent ideological 'glue' in the Parliament, roll-call analysis of voting in the Council shows that coalitions are more likely to form between (geographic) neighbors and fellow pro- (or anti-) integrationist countries (Mattila and Lane, 2001). Nevertheless, in comparison with most other legislative contexts, vote-buying by legislators seems especially plausible in the EU context. There is no 'government' party or coalition, nor are there disciplined parties or a stable coalition of states that always vote together. The salience of each issue varies greatly from one state to another, member states are very well informed of each other's preferences, and there is a well-developed institutional infrastructure for intertemporal trades. Indeed, vote-buying models might help explain the surprising frequency of oversized coalitions and unanimity in the Council even when voting rules call for qualified majority voting.⁷

Mattila and Lane (2001) show that basic disagreements that prevent member states from voting together are primarily found among the large member states. Thus the 'swing' votes of small member states might be quite valuable, and they are plausible and attractive coalition partners in a variety of contexts. Indeed, the Mattila and Lane study shows that, when formal votes are taken, small states are very rarely outside of winning coalitions in the Council. The large states are much more likely to cast 'no' votes or abstain.

Empirical analysis

The previous section argued that, given the structure of EU decisions, the likelihood of vote-trading, and empirical findings from other countries with malapportioned legislatures, there are strong reasons to expect to find a link between representation and redistribution in the European Union. Yet no systematic empirical work has examined the relationship. Previous empirical studies of EU fiscal transfers do not address representation (Carrubba, 1997; De La Fuente and Doménech, 2001). In fact, one recent study concludes that the redistributive impact of fiscal flows across Union members has been considerable given the small size of the budget, but puzzles over the weakness of the link between country income and redistribution, noting that there are significant unexplained differences in net contributions across countries with similar prosperity levels (De La Fuente and Doménech, 2001). The simple argument linking voting power and transfers might go a long way to fill this gap. This section examines data on the distribution of EU transfers from 1977 to 1999. The main dependent variables are (1) real per capita *net* transfers paid or received (total transfers received less revenue contributed to the EU) and (2) real per capita transfers received by each member state (both in 1995 euro).⁸ Additionally, real per capita transfers can be decomposed into their largest

components: real agricultural and structural (regional development) funds per capita. Unfortunately, however, truly comparable disaggregated data are available only since 1995.

First of all, Table 5 presents basic descriptive statistics for the entire period, but divides between overrepresented and underrepresented member states. The first line shows that, on average, the overrepresented states are net recipients, while underrepresented states are net contributors. Disregarding revenues paid into the system, the second line shows that, on average, overrepresented states receive over twice as much from the EU as underrepresented states. Of course these differences could be mere artifacts of other characteristics of member states. The redistribution programs that dominate the EU budget are, after all, designed to do two rather specific things – subsidize farmers and poor regions. Thus data have been collected on agricultural employment as a share of total employment (from the OECD Statistical Compendium) and real per capita GDP (from Penn World Tables). Additionally, Carrubba (1997) argues that transfers can be seen as side payments in exchange for further integration made by governments whose voters support integration to those whose citizens are Euro-skeptics. Thus following Carrubba, I have also collected survey data on the level of support for the European Union among the citizens of each member state.⁹ It is also useful to control for population size to insure that the representation variable is not a mere proxy for country size, which might have its own independent effect on transfers. Descriptive statistics for these data are also presented in Table 5. Upon first glance, these factors do not appear to be driving the difference in transfers between the over- and underrepresented states – for each of these variables (except of course for population) the difference between the two groups is trivial.

Votes per capita

Though striking, these initial observations must be confirmed with more careful multivariate analysis. The most straightforward way to examine the effect of legislative apportionment on spending is used in all of the studies cited above – regressions of real per capita transfers on votes per capita. However, a study of the EU introduces some issues not present in other federations: the balance of power between chambers and voting rules within chambers have evolved over time as described above. For instance, measures of *votes per capita in the Parliament* or *qualified majority votes per capita in the Council* are less appropriate in the 1970s, but may be useful today. *Unanimity votes per capita*, on the other hand, are less appropriate today than in the 1970s. In any case, the nascent formal literature on multi-cameral vote-trading

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Table 5 Descriptive statistics, comparison of over- and underrepresented member states, 1977–99

	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
<i>Overrepresented member states</i>				
Real net transfers per million persons (1995 euro)	93.80	212	-182	583
Real EU grants per million persons (1995 euro)	282.60	175	37	778
Agriculture share of workforce	0.090560	0.0742	0.0235	0.2955
GDP per capita (1985 US dollars)	11726.68	3578.55	6008	21208.60
Popular support for European Union (%)	47.81	24.18	-0.4000	77.78
Population (million)	7.41	4.57	0.36	15.60
<i>Underrepresented member states</i>				
Real net transfers per million persons (1995 euro)	-24.00	66	-138	160
Real EU grants per million persons (1995 euro)	126.80	50	72	281
Agriculture share of workforce	0.0658541	0.0387	0.019404	0.151101
GDP per capita (1985 US dollars)	11926.52	1684.85	9200.11	14765.80
Popular support for European Union (%)	42.95	23.09	-7.75	71.11
Population (million)	57.40	9.43	38.80	82.00

suggests that it is important to consider the apportionment of all relevant legislative chambers. The first set of regressions aims for comparability with previous studies (e.g. David and Eisenberg, 1961; Ansolabehere, Gerber, and Snyder, 2001) that deal with bicameralism by taking averages of votes per capita in the upper and lower houses of the United States legislature. Thus the regressions presented in Tables 6 and 7 examine the average *votes per capita* calculated for each of the three relevant decision rules used in EU legislation – weighted Council votes, unanimity vote, and parliamentary votes – though virtually identical results can be obtained using any of the three measures individually. Since the representation variables demonstrate skewed distributions, logs are used.

Before going to regression results, it is useful to examine a simple scatter plot of real net transfers per capita on (logged) average votes per capita. Figure 1 displays the data for each year in the data set, using different symbols for each manifestation of the Community/Union. The member states are clustered into discernible bands for each apportionment. For example, the three observations in the lower left corner are Germany in the last three years of the EU12 – after unification but before reapportionment. In addition to the strong positive relationship between votes and net transfers, which holds up over each period, the most striking feature of Figure 1 is the band to the far right that represents Luxembourg. Its miniscule size makes it an extreme outlier. When models are estimated using the entire sample including Luxembourg, analysis of influential points using Cook's distance (Cook, 1977) suggest that Luxembourg should be dropped from the regressions. Thus all of the results presented below exclude Luxembourg.

Yearly data are available for all variables described above from 1977 to 1999. The panels are unbalanced because the EC9 countries provide observations since 1977, the EU12 countries provide observations only since 1986, etc. Yearly changes in votes and voting power per capita reflect only small fluctuations in the denominator, whereas substantial changes take place only with each reapportionment (accessions in 1981, 1986, and 1995; see Table 4). Thus the purpose of the first set of regressions is to focus on *cross-section* effects

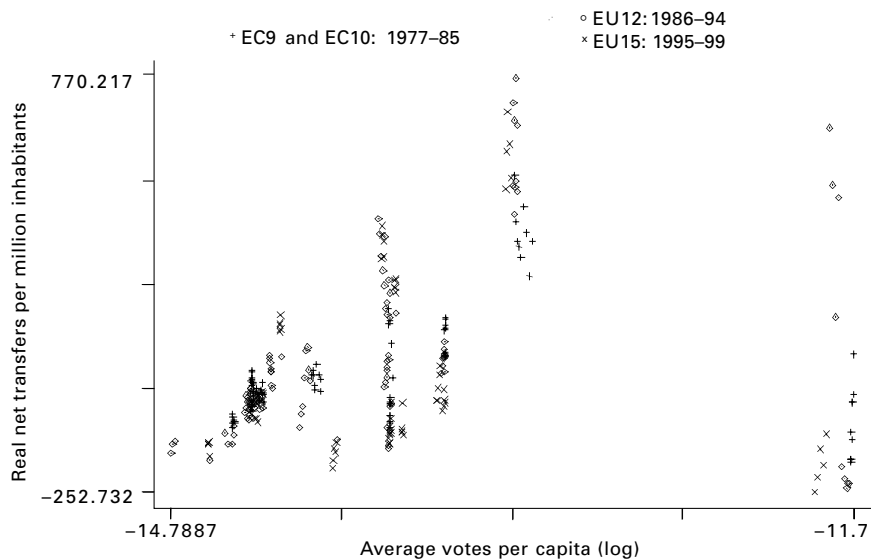


Figure 1 Votes per capita and real net transfers per capita.

Table 6 Estimates of net transfers, agricultural and structural funds per capita

Dependent variable	Model 1 Real net transfers per million inhabitants	Model 2 Real net transfers per million inhabitants	Model 3 Real agricultural transfers per million inhabitants	Model 4 Real structural funds per million inhabitants
<i>Representation variable</i>				
Log average votes/capita				
X (EC9 dummy)		514.9946 (144.79)***		
X (EC10 dummy)		517.16 (144.80)***		
X (EU12 dummy)		514.8892 (144.65)***		
X (EU15 dummy)		513.2703 (144.70)***	895.376 (158.04)***	656.4833 (38.20)***
<i>Control variables</i>				
Agriculture share of employment	493.97 (281.74)* (0.01)***	298.63 (242.87) (0.005)***	948.61 (432.40)** (0.006)**	171.20 (171.87) (0.002)***
GDP per capita	-0.01 (0.40)	-0.02 (0.42)*	0.01 (0.36)	-0.02 (0.12)***
Popular support for EU	0.44 (14.85)***	0.77 (21.33)*	0.41 (56.75)***	1.05 (12.26)***
Log population	-69.56 (21.33)*	125.54 (28.22)	289.81 (31.71)	220.36 (356.13)***
EC10 dummy	-38.09 (28.22)			
EU12 dummy	-19.53 (31.71)			
EU15 dummy	2.60 (284.15)***	5407.24 (1202.45)	7498.9 (1323)***	5913.97 (356.13)***
Constant	1394.08 (25)			
R^2	.25	.42	.70	.87
Rho (autocorrelation)	.82	.75	.78	.25
No. of observations	229	229	56	
No. of countries	14	14	14	14

Notes: Prais-Winsten regressions, panel-corrected standard errors in parentheses.
 *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

without sacrificing useful time-variant information for the dependent and control variables, but it is useful to examine individually the effects of representation for each apportionment. In the models in Tables 6 and 7, panel-corrected standard errors are calculated and, because tests revealed first-order autocorrelation, Prais–Winsten regressions are performed. The models also assume that the disturbances are heteroskedastic and contemporaneously correlated across the panels.

Table 6 presents the results of four models. The first two models estimate real net transfers per capita. The first model includes only the control variables described above, along with dummy variables for each manifestation of the EC/EU to control for period effects. The second model adds 'average votes per capita' and, to accommodate the possibility that the coefficient and standard error are not constant across manifestations of the EC/EU as countries are added and votes reapportioned, this variable is interacted with the period dummies. Note that, when the representation variable is added, the R^2 jumps from .25 to .42. The coefficients for 'average votes per capita' are large, significant at the 1% level, and virtually identical in each period. Indeed, the coefficient, standard error, and overall fit are similar in a model (not shown) without period interactions. The marginal effects of overrepresentation are substantial. The sample median is a net contributor of around 30 euro per million and the largest recipient (Ireland in 1991) received around 770 euro per million citizens. According to marginal effects calculated from Model 2, a 1% increase in average votes per capita – roughly the move from Belgium (the sample median) to Sweden during the EU15 – is associated with an increase of over 7% in net transfer position. A more extreme move is from Belgium to Ireland during the EU15 – a 120% increase in votes per capita. On average, Belgium was a 90 euro per million contributor during this period, and the model predicts that the move to Ireland's per capita representation is associated with a jump to the status of a 600 euro per million recipient.

Instead of net transfers, Models 3 and 4 examine separately real receipts from agricultural and structural funds during the EU15 period (1991–5) – the only years for which suitable data were available. The results are quite similar: other things equal, overrepresented states are rather dramatically favored in the distribution of both agricultural and structural funds. The marginal effects are quite similar to those described for real net transfers.

These results are quite robust to alternative measures and specifications. Similar results are obtained for each dependent variable – real net transfers, real total receipts (not shown to save space), and real agricultural and structural payments. The main results are also unaffected by the inclusion of a lagged dependent variable or the inclusion of a matrix of year dummies. Similar long-run results are also obtained using an 'error correction' set-up,

or when 'between-effects' regressions are estimated for cross-section averages over each period. Analysis of residuals suggests that Ireland – the band of observations in the top center of Figure 1 – is the only influential observation of concern. However, the results are quite similar when the regressions are estimated without Ireland (or any other individual country).

Voting power per capita: comparing the Council and Parliament

The results thus far suggest a strong, stable relationship between representation and fiscal redistribution. However, it is possible that, by examining averages over the two legislative chambers, one masks some subtleties of the evolving EU institutional framework. For instance, it is possible that the importance of representation in the European Parliament has grown relative to that of the Council as the former has gained strength in general. Alternatively, one might suspect that vote-trading in the Parliament is less important in determining budgetary allocations since the rise of the multi-year 'Financial Perspectives' in 1988. To examine these possibilities, the next set of regressions (summarized in Table 7) include measures of representation in both the Council and Parliament in the same regressions. Instead of votes per capita, relative voting power per capita is a more useful variable for comparing effects across chambers and over time because, in each apportionment for each chamber, the Shapley–Shubik Index adds up to one. This may in any case be a more suitable measure of strength in a vote-trading context than simple votes per capita. However, significant coefficients might seem unlikely given the low number of countries and the fact that Council and parliamentary voting power per capita are rather highly correlated (around .86 overall, even higher in most recent years).

In fact, Table 7 shows that parliamentary and Council (QMV) voting power per capita both achieve statistical significance. Model 5 examines the effects over the entire period controlling for period effects, while Model 6 interacts the representation variables with period dummies to examine changes over time. The results presented in Table 7 survive the same robustness checks described above. In general, the coefficient for the Council is slightly larger than that for the Parliament (with the exception of the EC10, which covers only five years). But it is noteworthy that, even with Council representation held constant, the coefficient for parliamentary voting power per capita is statistically significant. Moreover, when Model 5 is estimated without the parliamentary variable, the R^2 drops from .40 to .25. Given the number of observations, it is difficult to draw firm conclusions from Model 6 about changes over time. Perhaps a more natural cut-point would divide

Table 7 Estimates of net transfers per capita

	<i>Model 5</i>		<i>Model 6</i>	
<i>Representation variable</i>				
Log Council voting power per capita	177.22	(57.20)***		
X (EC9 dummy)			396.89	(136.67)***
X (EC10 dummy)			124.05	(73.77)*
X (EU12 dummy)			300.65	(82.60)***
X (EC15 dummy)			280.69	(86.33)***
Log Parliament voting power per capita	134.3982	(49.15)***		
X (EC9 dummy)			21.79	(141.48)
X (EC10 dummy)			293.00	(107.00)***
X (EU12 dummy)			111.14	(43.85)***
X (EU15 dummy)			127.08	(55.43)**
<i>Control variables</i>				
Agriculture share of employment	466.34	(244.00)**	462.09	(231.36)**
GDP per capita	-0.01	(0.005)***	-0.01	(0.005)***
Popular support for EU	0.51	(0.40)	0.58	(0.39)
Log population	65.20	(33.20)**	126.07	(45.05)***
EC10 dummy	10.98	(18.60)		
EU12 dummy	94.51	(35.45)***		
EU15 dummy	151.28	(43.86)***		
Constant	5074.34	(971.21)***	6069.33	(1212.84)***
R^2		.40		.44
Rho (autocorrelation)		0.75		0.73
No. of observations		229		229
No. of countries		14		14

Notes: Prais–Winsten regressions, panel-corrected standard errors in parentheses.
 *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

the data into pre- and post-1988 periods, to correspond with the periods before and after the introduction of the Council-dominated multi-annual budget planning process. These estimations (not reported to save space) show that the coefficients for Council and parliamentary voting power per capita in Model 5 are virtually identical in both periods.¹⁰ Thus, all in all, the effect of representation on redistribution seems quite stable over time and, though it is difficult to judge with certainty because of high correlation across decision rules, the Council and the Parliament both appear to play a role.

Control variables

Most of the control variables behave as expected, though they certainly do not tell a complete story about EU redistribution. Though positive as expected, the statistical significance of the coefficient for agricultural share of total employment is sensitive to model specification in estimations of net transfers, but the expected relationship is quite strong in the disaggregated analysis of agricultural transfers (Model 3). As expected, poor countries are larger net recipients of EU transfers. But Table 6 demonstrates that this is driven purely by the structural funds examined in Model 4, because Model 3 confirms the popular belief that the largest recipients of agricultural transfers are the relatively wealthy countries. The coefficient for public opinion, while unexpectedly positive, is very sensitive to alternative specifications and time periods. Finally, note that population has a negative, highly significant coefficient in Model 1, but this is clearly a proxy for representation, because when 'votes per capita' enters the regression the population variable reverses its sign. Thus, when representation is held constant, large countries actually receive more per capita than small countries.

Conclusion

The empirical analysis demonstrates a close connection between the distribution of votes and fiscal transfers in the legislative institutions of the European Union. Other things equal, small member states with more votes and relative voting power per capita are favored in the distribution of transfers. This relationship has held up through successive enlargements. Perhaps these results should not be surprising. Large states might desire the gains associated with forming and deepening a federal union – so much so that they are willing to pay off fearful, indifferent, or simply manipulative states. Perhaps when such states are offered more votes per capita in the initial bargain, fiscal redistribution in the future is an implicit part of the offer. In other words, Germany may well have initially wooed some potential member states by offering to solve some (very limited) problems with its checkbook. Perhaps the evidence presented in this paper merely demonstrates that the bargain has held up.

Such explicit exchanges involving representation and guaranteed redistribution are often involved in federal bargaining. For example, in such diverse federations as Mexico, Germany, Argentina, and Australia, state-level officials have explicitly traded wide-ranging authority and tax autonomy for (1) guaranteed fiscal redistribution and (2) veto power in future

renegotiations. Perhaps in these scenarios, it should not be surprising if the overrepresented states are systematically favored.

However, over time the conditions that underlie the initial bargain might change, but owing to the multiplicity of veto players the bargain might be extremely difficult to renegotiate. Once the collective goods have been obtained – e.g. common defense, improvements in tax collection, or free trade have been secured – public support for transfers from under- to overrepresented states might decline. Such support may not have been strong in the first place. When the redistribution is publicized, political entrepreneurs in ‘paying’ states – from Buenos Aires and São Paulo to Baden-Württemberg and Alberta to Germany itself – face incentives to call into question the rationale of the bargain. In such cases, mounting evidence that the initial bargain *has* been honored can have political importance, even if the size of the transfers – only 1.3% of European GDP in this case – is relatively small.

Placed in this broader context, the findings of this paper make it clear that a good deal may have been at stake at Nice. It is not surprising that the minutiae of voting weights and blocking thresholds were such contentious issues. Nor is it surprising that the large member states drove such a hard bargain. In fact, they succeeded in reversing the trend towards greater malapportionment. The complex bargain reached in Nice will for the first time increase the voting power of the large states. For example, according to the calculations of Bräuninger and König (2001), Germany’s Shapley–Shubik value will increase from .117 to .138, while Ireland’s will fall from .035 to .028. However, malapportionment has been only slightly reduced – Ireland will still have more power per capita in the Council and Parliament. Debates among economists about the importance of risk-sharing and redistribution in currency unions tend to assume that transfers will be determined by benevolent despots in response to clear shocks; political institutions and bargains play no role. However, the *Realpolitik* of any move towards a larger redistributive role for the EU must confront the stable connection between representation and redistribution that has already developed, even though the scale has thus far been small. Moreover, though it is difficult to defend the current systems of agricultural and regional development subsidies from any economic efficiency standpoint (Boldrin and Canova, 2001), attempts to scale back or substantially alter these programs – on which the success of expansion surely hinges – will be extremely contentious.

The arguments and findings presented in this paper suggest several promising avenues for future research. First of all, theoretically informed qualitative research on the EU legislative process and quantitative analyses of roll-call voting should pay more attention to the possibility of vote-trading and vote-buying, comparing the strategic behavior of small and large states.

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Second, several years hence, it will be interesting to return to the issue and find out whether the Nice reapportionment – if indeed it becomes a reality – led to a reverse in the patterns of public expenditure presented in this paper. Third, future studies in the EU and other federations might attempt to make apportionment itself an endogenous variable. Under what conditions do large member states allow themselves to be underrepresented? Under what conditions do they demand reapportionment, and what shapes their likelihood of success? A more specific puzzle is the Nice compromise itself – how did the outnumbered large member states manage to win? One interesting possibility is that steep declines in public attitudes towards European unification in the large, transfer-paying member states enhanced pressure on politicians to push for reforms, and hence strengthened their bargaining positions at Nice. This leads to a related proposition – that transfers themselves affect public opinion. If member states attempt to buy public support with transfers, are they successful? This paper has touched only the tip of the iceberg of a complex dynamic interplay between transfers, public opinion, representation, and federal bargaining. Further exploration is likely to shed considerable light on the problems and prospects for fiscal federalism in Europe.

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Notes

- 1 A partial transcript was published in *The Economist*, 16 Dec. 2000: p. 26.
- 2 See, e.g., Johnston (1995), Morriss (1995), Garrett, McLean, and Machover (1995), Tsebelis and Garrett (1996).
- 3 Rather than enter the fray about the advantages of various power indices, this paper presents data and results based on the Shapley–Shubik Index simply because it is the most familiar and frequently used. ‘Banzhoff’ and ‘Inclusiveness’ indices have also been calculated, as well as an additional index proposed by Snyder, Ting, and Ansolabehere (2001). These measures are so highly correlated with one another (over .99) that the debate should be of little concern for empirical researchers.

- 4 For examples of this coalition-building strategy, see Lee (2000) on the United States Senate, and Gibson and Calvo (2000) on Argentina.
- 5 See, e.g., Dasgupta et al. (2001) on the political distribution of 'non-discretionary' transfers in India in spite of autonomous agencies and multi-year plans.
- 6 Note that this study covers a sample of votes that does not include the budget, which would likely encourage voting along member state lines.
- 7 See Mattila and Lane (2001), who build on the argument of Groseclose and Snyder (1996) that the cheapest winning coalition might be oversized if the vote buyer needs to worry about competing vote buyers who will try to make counter-offers to poach some of their supporters.
- 8 Data from 1977 to 1990 were kindly provided by Clifford Carrubba, and data from 1991 to 1999 were obtained from the same source used by Carrubba – reports of the European Court of Auditors, published in the *EU Official Journal*, various years.
- 9 Source: Eurobarometer Survey, various years. Respondents are asked whether the European Union is a 'good thing,' a 'bad thing,' or neither. The measure used is simply the share of respondents answering 'good' less the share that answers 'bad.'
- 10 Similar results for all of these models can be obtained using real receipts rather than net transfers. Although potentially very interesting, separate regressions for agricultural and structural funds are not advisable because of the combination of small n and high collinearity between parliamentary and Council voting power per capita during the EU15.

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