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POWER INDICES IN THE EUROPEAN UNION

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ABSTRACT

Jan-Erik Lane and Sven Berg, and Manfred Holler and Mika Widgrén, agree that power index analysis of the EU cannot take into account its institutional structure. For us, this is a sufficient condition for its failure as a research program. Nonetheless, they go on to argue that power indices are better suited than our analysis to address questions of institutional design under conditions of uncertainty. We demonstrate, however, that the way they model uncertainty (outcomes are uniformly distributed across the possible ‘states of the world’) means that their conclusions depend heavily on the partition of these states of the world. As a result, power-index-based analyses of institutional design are not informed by the factors that should be included (institutions and strategies) and instead rely on a priori mathematical formulas and analysts’ questionable assumptions about the partition of future states of the world.

KEY WORDS • agenda-setting • European integration • European Union • legislative processes • power indices

1. Introduction

Our article (this issue, pp. 291–308) criticizing applications of power indices in the European Union (EU) highlighted their failure to take into account the preferences of actors and the institutional environment of decision-making. We went on to observe that

Some recent power index articles have sought to address the preferences problem, but they have frequently done so in ways that generate unstable and misleading results . . . Moreover, the institutions problem is pervasive and congenital. No power index analysis that we know of adequately takes into account the structure of the legislative games played among the Council and Commission and the European Parliament – arguably the most interesting and original institutional feature of the European Union. (Garrett and Tsebelis, 1999: 292)

Nothing that Lane and Berg (L&B) and Holler and Widgrén (H&W) say in their rejoinders to our article indicates that we should modify these points. They claim that some power indices take into account preferences (a point we have already made). But in addition, L&B and H&W both assert that indices provide an a priori analysis that is useful when we do not know the
positions different actors will take on specific issues – ‘constitutional analysis’ according to L&B, an approach similar to ‘incomplete contracts’ for H&W. Finally, H&W concede that power indices do not take into account the institutional structure of the EU (and the power of agenda-setters in particular), whereas L&B remain silent on this issue. Given that L&B do not defend their previous attempts to model institutions through power indices (Lane and Maeland, 1995), we consider their silence as consent to our point.¹

Thus, L&B and H&W seem in many ways to concur with our analysis. But they still want to demur from our bottom line (that the application of power indices to the EU is not a productive research program). Why do they not accept our conclusion when they agree with its premises? The main defense of power indices in both rejoinders is the notion of their ‘a priori-ness’. In the absence of relevant information – when we do not know the positions different actors will occupy on specific issues (H&W), or in constitutional debate (i.e. treaty negotiations [L&B]) – they argue that power indices are the best we can do. In this article, we focus on this claim. But first, let us raise the issue of institutions one last time because it is central to our critique of the ‘a priori-ness’ argument.

2. The Effects of EU Institutions

This section reiterates our fundamental contention that the absence of institutions from power index analyses of the EU is not an innocuous omission or simplification. It is a sufficient condition for rendering this approach irrelevant to understanding both policy change on specific issues between treaty revisions and negotiations about treaty revisions themselves.

What were the major substantive issues in the intergovernmental bargaining that resulted in the signing of the Single European Act, the Treaty on European Union and the Amsterdam Treaty? In our judgment, two fundamental areas stand out concerning the political structure of the European Union: increasing decision-making efficiency and reducing the democratic deficit.² The solution to the first problem has been the ever-increasing use of qualified majority voting (QMV) in the Council of

¹ L&B also argue that we are opposed in general to the use of cooperative game theory in political science. The interested reader can verify that one of us has co-authored a book where cooperative game theory is used, and in which the conditions under which it should be used are specified. (Tsebelis and Money, 1997).

² For present purposes we exclude monetary union from our discussion, although it should be made clear that no one has argued that power indices give us any leverage over this issue. Rather, institutional approaches of the type we advocate are commonplace (Garrett, 1993, 1998).
Ministers. This move precipitated the proliferation of power index research because it is not very interesting to calculate power indices either for unanimity voting rules (the old EU norm) or for those that weight all votes equally (as in most national political systems). We discuss the utility of power indices for analyzing QMV votes in the Council later.

Reducing the democratic deficit has been a more complicated matter, with numerous initiatives written into the various treaties. The Single European Act allowed for the Commission and the Parliament to make proposals to the Council, while also making it more difficult for the Council to modify these proposals than to accept them (‘conditional agenda setting’ [Tsebelis, 1994]). The creation at Maastricht of a joint ‘conciliation’ committee for ironing out differences between the Parliament and Council granted the Parliament a legislative veto (Garrett and Tsebelis, 1996). The Amsterdam treaty’s revision of the codecision procedure makes the Parliament a co-equal legislator with the Council by vesting the conciliation committee with effective agenda-setting power (Tsebelis and Garrett, 1997; Garrett and Tsebelis, 1997).

All of these issues addressing the democratic deficit are surely ‘constitutional’ in the sense meant by L&B. Nonetheless, they choose not to discuss the empowering of the Parliament as part of the EU’s constitutional evolution. Instead, they resort to the simplest type of power index analysis, concerning the effects of voting weights in the Council. Here, we only reiterate H&W’s observation that once the decision-making game involves sequential moves and more than one institution, power indices are not appropriate.

But are power indices better analytic tools in studies ‘concentrating on the Council only’ as H&W claim (p. 328)? Most of the time power index calculations affirm the intuitive result that a country’s legislative influence is increasing with the number of votes it has (e.g. Germany is more ‘powerful’ than Luxembourg). As power index scholars observe, however, results are not always monotonic. Some countries with more votes sometimes have less power on some indices. But does this mean, as L&B seem to imply, that power index scholars should tell a government leader, for example, to ask for 4 rather than 5 votes in the Council – because this would increase her/his country’s influence on a power index or two? Should we expect the leader to accept this kind of advice? We think it is more realistic to assume that governments want as many votes as they can get. But we also believe that governments will think strategically both about where they stand in relation to each other on important issues and about how institutional arrangements affect their influence over these issues.

There is one variant of power index analysis that attempts to deal with these strategic considerations. Steunenberg, Schmidtchen and Koboldt (1999, henceforth SS&K) make their index calculations on the basis of a
non-cooperative game theoretic model. Their model allows the different players (as well as the status quo) to occupy all possible positions in the model (as the H&W argument requires). In this respect, SS&K’s ‘strategic power’ is a considerable advance in the power index genre. It occupies an intermediate position between the probabilistic institution-free environment of conventional indices and the deterministic institutional analysis that we have conducted in our papers. But is it the best of both worlds? Let us now focus on the probabilistic part.

3. Probability and Power Indices

This section demonstrates that the probabilistic feature that SS&K shares with conventional power indices is a liability, not an advantage. All indices assume that all possible states of the world are equally probable, and hence that they can legitimately be averaged in the computation of policy influence. This may seem an innocuous assumption. In fact, in many game theoretic models, complete uncertainty about some state of the world defined by one parameter is operationalized by a uniform distribution of this parameter. However, in the case of power indices the event space is very complicated and it can be partitioned in many different ways – each of which produces different outcomes.3

We have already argued in our original article about one case of different possible partitions of the states of the world. Should Germany (with 10 votes in the Council) and The Netherlands (with 5 votes) be considered two different countries with independent probabilities of voting ‘yes’ or ‘no’ on any issue? Or, since they vote together most of the time, it is better to think of these two countries as an ironclad coalition with 15 votes? Since most power indices are not additive, the two partitions of the world (the EU in this case is partitioned into 15 or 14 countries for the purpose of the calculation) produce different results.

Let us now elaborate this point about the fact that the uniform distribution assumption in power index calculations is not innocuous when the event space is complicated. We show both that results change significantly with differences in partitions and that there is no manifestly ‘correct’ way of partitioning the events.

Consider two examples. First, in our original re-estimation of preference-influenced (i.e. connected) power indices, we said that the distribution of power in a seven-member Council with equal voting weights under

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3. See Seidenfeld (1979, 1986) for the incompatibility of the uniform distribution assumption and Bayes’ rule, as well as for many examples where apparently innocuous assumptions about the way the states of the world are partitioned affect probabilities assigned to different events.
a 5/7th QMV rule with preferences distributed on a straight line from 1 to 7 should be: \( PI(1) = PI(7) = 1/15; PI(2) = PI(6) = 2/15; PI(3) = PI(4) = PI(5) = 3/15 \) (Garrett and Tsebelis, 1996). Our logic was that there are three connected QMV coalitions – 12345, 23456 and 34567. Governments 1 and 7 belong to one of these, 2 and 6 to two, and 3, 4 and 5 to all three. Thus, on the basis of coalition participation, we argued that governments 3, 4, and 5 are the most powerful.

In their rejoinder to our JTP article, H&W (1999: 324) challenge our connected power index scores. They argue that in the previous example, \( PI(1) = PI(2) = PI(3) = PI(5) = PI(6) = PI(7) = 1/6 \) and \( PI(4) = 0 \). Why? Because they assume that the world should be partitioned on the basis of pivotalness, not participation. 1, 2, 3, 5, 6 and 7 are pivotal once, whereas 4 is never pivotal. For the same example (one dimension, seven players and 5/7 qualified majority rule), L&B (1999: 316) come to a different conclusion: \( PI(1) = PI(3) = PI(5) = PI(7) = 1/8, PI(2) = PI(6) = 1/4, PI(4) = 0. \) We do not want to defend our assumptions over H&W’s or L&B’s. Rather, our simple point is that one’s assumptions about the partition of the world are crucial and can have a dramatic impact on results. In these examples, the median member of the Council is either the most powerful (based on coalition participation) or has no power at all (based on ‘pivotalness’). Similarly, the quartile positions either have more power than the others (L&B) or not (H&W). Go figure!

Our second example is drawn from SS&K (p. 347). Here, there are eight possible spatial locations, the Council is composed of five members on discrete points in the space, the Parliament and the Commission are unified actors occupying one position each, and the status quo is at the remaining point. All actors and the status quo occupy these positions with equal probability. Thus, there are \( 8^5 \) possible states of the world.\(^4\) SS&K then calculate the outcome of a non-cooperative game for each discrete state of the world, find the average position of the status quo, and calculate its distance from the position of different actors.

In SS&K, the Parliament, for example, is considered a unified actor that is located with equal probability on any of the eight points in the policy space. What happens if we modify this assumption so that the Parliament is composed of several members, each of whom has the same probability of being located at any point in the space? SS&K’s calculations would now have to locate the median of the Parliament before running the simulations (since the Parliament uses an \((n + 1)/2\) decision rule). But this median is no longer uniformly distributed. Rather it is distributed according to a beta distribution centered in the middle of the interval (Mood et al., 1974:

\(^4\) We omit the dummy player that Steunenberg et al. have introduced in their model in a very creative attempt to ‘separate power from luck’.
252–3). This would have a significant effect on SS&K’s calculations of the Parliament’s influence.

What about SS&K’s analysis of the Council? Here, what matters is not the distribution of each member, but rather the distribution of the (in their example, 4/5) QMV pivots. These pivots are distributed again according to a beta distribution (with different parameters than the distribution of the median). Again, these results would be different if it were assumed that QMV pivots were uniformly distributed. Moreover, SS&K consider a one-dimensional model. If they had considered two dimensions, there is no reason to believe that their results would have been the same, and this would also be true if one moved to a policy space of higher dimensionality.

In sum, these two examples demonstrate the significant impact of seemingly innocuous assumptions on power index calculations. Our critics may not think this is a big problem. For example, H&W (p. 324) argue that ‘if we obtain any piece of additional information we deal with a different power index’. L&B (p. 310) conclude that ‘these results were preliminary and would need to be revised in the light of further research.’ We could not disagree more. If power index analysis is to be analytically attractive for any reason, it is that the analysis generates numbers that summarize ‘power’ in some very general and robust sense. After all, H&W and L&B both criticize our analysis for requiring information about the spatial location of actors.

But what we have shown in this section is that power index calculations are extremely sensitive to underlying assumptions about states of the world. In addition to our examples here, one could look at Table 3 of SS&K to see the variety of results generated by different index calculations in the literature. If none is more defensible than the rest, what are the inferences we are supposed to draw about the EU on the basis of power indices?

4. Institutions and Constitutional Analysis

We have one final task. If power indices are trivial or objectionable even for the a priori, constitutional analysis proposed by H&W and L&B, is there a better alternative? The critical issue here concerns actors’ expectations about the future. Power index analysis has the researcher making crucial assumptions about the actors – they have no idea about what issues will arise and where they will stand on them. In contrast, we assume that actors have some information about these issues. It is then possible to construct game theoretic models with incomplete information where the actors have these plausible priors. We believe that such models are
considerably more plausible than power index calculations in which uniform distributions pop out on the screen of a computer much as Athena came out of the head of Zeus.

Consider an example H&W use. During the Single European Act (SEA) negotiations, Mrs Thatcher should have known that that she was not likely to be in a (QMV) majority on numerous issues pertaining to internal market reforms that required the imposition of EU-level standards. A simple one-dimensional spatial model in which the United Kingdom occupied an extreme position would have been more useful to her than a power index calculation which would report that the UK will always be just as powerful as Germany (because both have 10 votes). Does the fact that Thatcher acceded to QMV indicate that she preferred power index calculations to spatial models? We lack the necessary information to make this judgment, but we very much doubt it. However, if we learn, for example, that Thatcher wanted QMV to be used only in areas where the UK would be in the majority (e.g. liberalization measures opposed by Greece), and unanimity in other policy domains, this would be consistent with our approach. We would then have to ask the next question, which is why did Thatcher lose this bargaining game over the SEA?

5. Conclusion

Our original article made an argument about the inapplicability of power indices to decision-making in the EU, not of power indices in general, and certainly not of cooperative game theory. Power indices are not helpful in studying EU decision-making because they cannot take into account interinstitutional arrangements. Our critics accept this. If there is anything special and unique about the EU it is that it has complicated institutions (‘opaque’ is the word used often in the literature). But power indices are institution-free and hence they can shed no light on the effects of these institutions.

Our critics make the argument that power indices are ‘a priori’ analyses behind the veil of ignorance, constitutional analyses, incomplete contracts, and the like. In this article, we have demonstrated that even the most sophisticated approaches produce results that are very sensitive to simple assumptions about states of the world. This is why no two power indices are identical, and why scholars continue to devote considerable time to modifying existing approaches – despite the fact that they are analyzing the same, unrealistic, model of the EU in which the Council is a legislative hegemon.

In other words, power indices exclude variables that ought to be in a political analysis (institutions and strategies) and include variables that
ought to be left out (computational formulas and hidden assumptions). What else can we say to persuade our critics that they ought to resist the temptation to apply them?

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