How Parties Count

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Scholars frequently suggest that the number of political parties in a legislature plays an important role in explaining differential political outcomes cross-nationally. However, there is a disjuncture between most theories as to how the number of parties should influence political outcomes and the most common measure used in cross-national statistical analyses: the effective number of parties (ENP) weighted by their relative size in legislature. Most theories suggest that it is the distribution of bargaining power amongst parties that matters for political outcomes, which is not properly captured by this measure. This article shows that by weighting parties by their bargaining power rather than seat share, scholars can improve measurement validity and statistical analyses.

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Introduction

Recent studies in comparative politics and political economy have used the number of parties in legislatures to capture the extent to which power is dispersed amongst political parties. Scholars have suggested that the dispersion of power within legislatures matters not only for legislative outcomes, but also influences a wide range of political outcomes, including voting behavior (Kedar 2005), regime durability (Mainwaring 1993) and international negotiation (Cowhey 1993). With few exceptions, scholars engaging in cross-national quantitative analyses have relied on the effective number of parties weighted by seat share (ENP) (Laakso and Taagepera 1979) to capture power dispersion.

We argue that scholars should not use ENP as a measure of the dispersion of legislative power. ENP was originally intended to classify party systems rather than serve as a measure of power dispersion. ENP ignores the importance of legislative majorities, failing to capture the fact that a unified party with 51% of the seats generally has dramatically more power than a party with 49% of the seats, or that a party with 30% of the seats has more power when there is no majority party than when there is a majority party. The discontinuity between legislative majorities and minorities is vitally important for understanding legislative policymaking.

In this paper we show how the discontinuity between majorities and minorities can be readily captured by measures that use bargaining power rather than seat share. We

1 Typically scholars argue that greater power dispersion leads to greater status quo bias in policymaking (Tsebelis 1995, 2002). However greater power dispersion may actually encourage policy change in some circumstances. This may occur when there are common pool problems (Franzese 2010), when political actors seek to avoid blame (Weaver 1986), or when dispersion of power provides greater access to the political process (Ehrlich 2007, Immergut 1990). Although different scholars note different consequences of dispersion of power, our critique is of the reliance on ENP weighted by seat share to capture dispersion of legislative power.
replicate the analyses of two prominent studies, demonstrating that replacing ENP with measures that weight parties by their bargaining power increases measurement validity and strengthens statistical analyses. To facilitate the use of these measures we have constructed a publicly available dataset covering more than 800 elections across 117 countries from 1946 to 2000.

**How to Count Parties**

The literature on how best to count parties is vast. For example, Lane and Ersson (1994) identify fifteen different ways to measure various dimensions of party systems, and these are by no means an exhaustive set of possible measures of important aspects of party systems (e.g., Janda et al. 2010). Particularly in parliamentary democracies, scholars may find it equally or more important to consider the number of parties in cabinet rather than in the legislature (e.g. Tsebelis 2001, Bawn and Rosenbluth 2006), or if scholars are interested in parties’ electoral bases, scholars may wish to count parties in the electoral arena rather than in the legislature. Aspects of party systems such as volatility, the strength of anti-system parties, or the ideological position (preferences) of parties can all matter for policymaking.

In this paper we focus on what at first may seem like the much simpler issue of the number of parties in legislatures. Despite the apparent simplicity of the task, debates on how to count the number of parties have been extensive in the thirty years following Laakso and Taagepera’s article introducing ENP, and a wide range of alternative measures have been proposed and extensively debated (Molinar 1991, Niemi and Hsieh 2002, Dunleavy and Boucek 2003, Dumont and Caulier 2003, Blau 2009, Kline 2009,
Golosov 2010). We do not fully review these debates over how best to count parties in detail here, except to note that the standard by which most measures of the number of parties have been assessed is descriptive: the purpose of counting parties for this literature has been to represent qualitative archetypes of party systems. In contrast, our goal in this paper is to suggest an alternative measure of the number of legislative parties that better captures the dispersion of power in a legislature—a purpose for which ENP has been widely, and in our view, inappropriately used.

The key issue that scholars must consider in using a measure of the number of parties is how to weight parties. We must weight parties when we count them. In most counting exercises we weight units equally. And when scholars choose to use a measure of the absolute number of legislative parties, they are making the choice to weight all parties equally, suggesting every party is of equal importance. This option is generally not chosen, because in most legislatures some parties are more equal than others. One exceptional case in which scholars might be justified in treating all parties equally regardless of size is when unanimity is required in decision-making—a quite rare institutional design. By contrast, relying on the absolute number of cabinet parties may be an important measure, particularly in parliamentary systems in which cabinet

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2 See Blau (2009) for a similar comment on the literature and a suggestion to focus on the various purposes for which we count parties. The primary focus of that article however is on the level (arenas) in which scholars should count parties, whereas we focus here solely on counting parties in the legislature.

3 As Count von Count from Sesame Street teaches: “One apple, two apples, three apples, ah ha ha ha.”

4 For an intriguing discussion of one of the rare instances in which almost all decisions of a legislature were subject to unanimity rule, see Roháč (2008). Janda et al. (2010) report that the absolute number of legislative parties when logged may have a more significant relationship to various governance indicators in a broad cross-national analysis, however the underlying mechanism is not clear, although the authors suggest that it may be due to interest articulation rather than aggregation.
decisions may require the consent of all cabinet parties (Bawn and Rosenbluth 2006, Ehrlich 2007, Tsebelis 2002).5

Scholars generally weight parties by their ‘importance’. Most scholars assume that a party’s importance is sufficiently captured by its seat share in the legislature. The default measure scholars use to weight parties is thus the Effective Number of Parties measure (ENP). ENP is calculated using the equation \(\left(\sum s_i^2\right)^{-1}\), where \(s_i\) is the seat share of party \(i\).6 Thus, in a legislature in which every party has an equal seat share the absolute and effective number of parties are identical. However, as a party becomes much smaller relative to the other parties in the legislature its weight declines. As a result, ENP discounts the presence of small parties, comporting well with the qualitative literature categorizing types of party systems (Laakso and Taagepera 1979, Siaroff 2000).

However, seat shares do not always equate with legislative importance. A simple example can illustrate this point. Consider a three-party legislature with Parties A, B and C in two different scenarios. In Scenario 1 there are two larger parties, Party A and Party B, each with 44% of the seats, and one smaller party, Party C, with 12% of the seats. No party has a majority and any two parties can form a legislative majority. In Scenario 2 Party A has a majority (54%) and Party B and C are smaller, each with 23% of the seats. The absolute number of parties in parliament (3) and ENP weighted by legislative seat share (2.5) are identical in the two scenarios. However, the concentration of legislative

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5 Although some scholars have suggested it is reasonable to assume that coalition governments effectively require the unanimous assent of all cabinet ministers to enact policy (Tsebelis 2002), others argue that this is an over-simplification of coalition governance as the walk-away value of coalition partners may affect bargaining and thus not all parties are equal veto players (Strøm 2003, Lupia and Strøm 2008).

6 This is the inverse of the Herfindahl concentration index, a measure that is also used in the literature to capture party system fragmentation. Additionally, as Feld and Grofman (2007) demonstrate, ENP (and the Herfindahl index) can be represented as one particular functional form combining the absolute number of parties and the standard deviation of the size of parties.
bargaining power is quite different in the two scenarios. In the first scenario, all three parties are equivalent in terms of their role in making and breaking legislative majorities. In the second scenario, only Party A can be decisive, as it is the majority party.

As this example shows, parties’ ability to influence majority decisions in a legislature, not simply their seat share, matters. To capture this, scholars can use measures based on bargaining power rather than seat share to weight the importance of parties in legislatures. The normalized Banzhaf index can be used to capture bargaining power in legislative situations. This index has an appealingly straightforward definition that seems quite applicable to legislative bargaining: party $i$’s bargaining power is the proportion of times it is decisive in potential winning coalitions relative to other parties. In Scenario 1 discussed above, each of the three parties has equal bargaining power, while in Scenario 2 Party A has all of the bargaining power. Focusing on the bargaining power of the three parties captures the substantial differences in the legislature under these two scenarios.

Scholars can better capture the dispersion of power in a legislature by weighting parties by their bargaining power rather than their seat share. Dumont and Caulier (2005) suggest that by weighting parties by bargaining power rather than seat share, we are creating a measure of the ‘effective number of relevant parties’ (ENRP). ENRP captures the difference between legislatures that have a majority party and those that do not, and the complexity of forming a legislative majority. ENRP can be calculated as $\left(\sum b_i^2\right)^{-1}$, where $b_i$ is the normalized Banzhaf index bargaining power of party $i$. ENRP may not provide as good a descriptor of party system type as ENP, as all legislatures in which

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7 A more formal characterization of the Banzhaf index and a comparison to alternative measures of voting power, such as the Shapley-Shubik index, can be found in Laurelle and Valenciano (2001, 2008).
there is a majority party will look the same on the measure (ENRP = 1), but ENRP more accurately captures the dispersion of power amongst parties in a specific legislature than ENP.

<Figure 1 Here>

We have compiled a dataset which provides ENRP for 805 elections across 117 countries, building on Golder’s dataset on democratic elections from 1946-2000 (Golder 2005). Figure 1 provides a scatterplot showing the empirical relationship between the effective number of parties weighted by seat share and by bargaining power. The bargaining power scores for each party were calculated based on the seat shares of each party using the ‘Powerslave’ Mark II online calculator at the Voting Power and Power Index Website: http://powerslave.val.utu.fi/.

Figure 1 shows a strong correlation between ENP and ENRP (r = 0.87), but the correlation is stronger as the number of parties increases. The correlation at low levels of ENP (ENP<3.0) is 0.44, whereas at higher levels it is 0.77. This is to be expected: it is only with relatively few and/or relatively large parties that there are substantial divergences between seat share and bargaining power. This is a natural consequence of the fact that ENRP is quite sensitive to small changes in seat shares that change parties’ bargaining powers but is insensitive to those that do not change bargaining power. For example, the bargaining power of a party with 2% of seats in a 0.49-0.49-0.02 three-party

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8 This dataset will be made available on the author(s)’ websites. We appreciate --’s comment that the two major reasons scholars have relied on ENP in cross-national analyses is its familiarity and ready availability, and suggestion that it would be valuable to provide a comprehensive dataset with bargaining power-based measures as a complement to this paper.
9 Kline (2009) presents a more detailed descriptive comparison of the two measures for a smaller sample of countries/elections and highlights some of the specific circumstances in which the differences between ENP and ENRP are most acute.
10 The seat shares of each party in each election were collected from the sources listed in Golder’s Online Appendix 9 and/or other sources. For consistency with standard calculations of ENP, the calculation of bargaining powers used the methods suggested by Taagepera 1997 and discussed in Golder’s appendix.
parliament is equal to the two larger parties, and thus ENRP is 3.0, whereas only one party has bargaining power in the 0.51-0.47-0.02 situation (ENRP is 1.0), despite the miniscule difference in ENP (2.077 vs. 2.081). In legislatures with a large number of parties, none of which is particularly large, small changes in seat share are much less likely to lead to large changes in bargaining power.

Understanding these two measures helps in assessing their strength as proxies for underlying causal forces that motivate scholars to use them in quantitative analyses. ENP weighted by seat share is insensitive to the fact that (most) legislation is passed by majority rule. Thus, while it may be a reasonable proxy for party system type, it is a weaker proxy when used to capture the legislative bargaining situation. ENRP captures the differences in legislative bargaining situations based on an assumption of majority rule, but is insensitive to differences in parties’ seat shares that do not influence bargaining power narrowly construed. As a result, ENRP treats all legislatures with a majority party as identical, regardless of the size of the majority.

Ultimately, we would suggest that when scholars are attempting to capture any feature of the political system that is tied to bargaining in the legislature, and thus sensitive to the dynamics of the formation of legislative majorities, ENRP is likely to be a more useful explanatory variable than ENP. In contrast, ENP may be more useful as an explanatory variable when it is meant to capture general consequences of party system type, rather than the consequences of specific legislative bargaining situations. For example, Bawn and Rosenbluth (2006) use ENP as a proxy for the breadth of interests represented by typical parties in the legislature and Lijphart (1999) uses it as part of a broader characterization of the political system.
A practical strength of both measures is that they can be readily constructed from commonly available legislative seat share data, thus allowing us to compare the utility of the two measures for specific analyses. In our next section we replicate and extend two sets of analyses, demonstrating how using measures such as ENRP in situations in which scholars’ underlying theoretic concepts are tied to the legislative bargaining situation can strengthen empirical findings and improve the link between theory and empirical analysis.

**Brooks and Kurtz on Capital Account Liberalization**

In a recent article, Sarah Brooks and Kurtz examine how the legislative policymaking process affects the likelihood of capital account liberalization in Latin America (Brooks and Kurtz 2007). Brooks and Kurtz argue that capital account liberalization is a potentially risky policy choice for political elites to support. Although the short-term costs of liberalization are generally low and it rarely faces strong *ex ante* opposition from organized interests or parties, capital account liberalization does increase the “risk of systemic financial calamity” (Brooks and Kurtz 2007: 705). The challenge for political elites, therefore, is not to claim credit for increasing international capital openness, but rather to avoid blame in the event of a financial crisis. As a result, Brooks and Kurtz argue that greater legislative fragmentation allows for greater blame avoidance and thus increases the likelihood of capital account liberalization.

To measure legislative fragmentation, Brooks and Kurtz use the Herfindahl index, which is the inverse of ENP. The logic for choosing between a count measure (such as ENP) and a fragmentation index (such as Herfindahl) is similar to that of choosing
between GDP per capita and logged GDP per capita.\textsuperscript{11} Scholars use logged GDP per capita to take into account the diminishing returns of higher incomes—a $1,000 increase in GDP per capita for a poor country has a much larger impact than the same increase in a rich country. Similarly, a fragmentation index suggests that the marginal impact of each additional party is declining, while a count measure suggests that the marginal impact of each additional party is expected to be equal. By using a fragmentation index, Brooks and Kurtz expect that the marginal impact of an additional party on blame avoidance is smaller when there is a greater number of parties already in the legislature.

Although the Herinf Dahl index (H) captures the expected declining marginal impact of each additional party in a legislature on the ability of parties and politicians to avoid blame, it does not capture discontinuities in the relationship between parties’ seat shares and their bargaining power. For example, in the Brooks and Kurtz sample, a large number of legislatures have an ENP of approximately three (H \approx 0.33). Although some of these legislatures have clear majority parties (e.g. Peru 1993-95, Guatemala 1986-1990, Colombia 1999-2000), others do not (e.g. El Salvador 1992-97, Argentina 1992-93, Uruguay 1985-89). Similarly, although most legislatures that have an ENP of two (H \approx 0.5) have a clear majority party, there are some cases in the sample in which there are close to two effective parties but no party holds a majority (e.g. Honduras 1986-89, Trinidad & Tobago 1996-2000).

Intuitively when it comes to blame attribution, if there is a majority, voters will blame the majority party regardless of the number of parties in legislature. Whether there is one other party in legislature or five, more parties in legislature do not provide the

\textsuperscript{11} Although they are somewhat different non-linear transformations, party fragmentation indices and the log of the number of parties behave almost identically in most analyses.
majority party with cover. Thus, the difference between systems with an ENP of 2.0 and of 3.0 may be less meaningful for blame avoidance than the difference between systems that have a majority party and those that do not. As a result, we argue that weighting parties by their bargaining power provides a better approximation of parties’ ability to avoid blame as a function of legislative power dispersion than weighting parties by their seat share. To take this one step further, the critical distinction of legislative policymaking in terms of citizens’ attribution of political responsibility may be between situations in which there is a single party in control of government and when there is not (e.g. Royed, Leyden and Borelli 2000). If so, a dummy variable capturing the presence of a single-party majority in a legislature may sufficiently capture the key difference amongst systems.12

Thus far, we have argued that it is theoretically preferable to measure the dispersion of power within legislatures as a function of parties’ bargaining power rather than parties’ seat shares. To examine whether this conjecture holds empirically we replicate Brooks and Kurtz’s analysis using both seat share and bargaining power proxies for legislative power dispersion. To undertake this analysis, Brooks and Kurtz made their data and statistical code available to us and we were able to replicate their model specification and published results exactly.13 Our replications are based on Model 1 of Table 2 in Brooks and Kurtz (2007), and more detailed discussion of the dependent variables and the other covariates may be found in that article.

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12 A single-party majority dummy variable is an alternative method for weighting parties by importance in which parties only count if they have a majority in the legislature.

13 Given Brooks and Kurtz’s use of the concept of legislative fragmentation rather than concentration, we use seat share fragmentation and bargaining fragmentation measures rather than the Herfindahl concentration index to ease the interpretation—as the fragmentation index is 1-H, this does not alter the results.
In Figure 2 we graphically present the relationship between largest party seat share and the Chinn-Ito capital account liberalization measure for Brooks and Kurtz’s sample. Based on Brooks and Kurtz’s argument that capital account liberalization is more likely as it becomes easier for parties to avoid blame, capital account liberalization should be negatively associated with the seat share of the largest party in legislature.\footnote{We use largest party seat share rather than a fragmentation index to enable examination of the potential discontinuity between seat share and bargaining power between majority and minority situations. Largest party seat share and the Herfindahl index correlate at 0.93 for Brooks and Kurtz’s sample, and largest party seat share is a stronger predictor of financial liberalization than the Herfindahl index, both at the bivariate level and in the full multivariate specifications used by Brooks and Kurtz.} As can be seen in Figure 2 Panel A, a local bivariate regression analysis supports this argument: an increase in the seat share of the largest party in legislature is associated with a decline in capital account liberalization.\footnote{For Figure 2 Panel A, local bivariate regressions were run using the lpoly command in STATA 11, which relies on kernel-weighted local polynomial smoothing. The regressions reported in Figure 2 Panels B and C were run using the rd command created by Nichols (2011), which implements the lpoly command above and below 0.50 largest party seat share. The bandwidth for all models was 0.08.}

However, the analysis presented in Figure 2 Panel A does not take into account the fact that the largest party’s ability to avoid blame changes discontinuously when it achieves fifty percent of the seats in legislature. This discontinuity makes it possible to implement a regression discontinuity design in which we estimate the relationship between capital account liberalization and largest party seat share when the largest party’s seat share is above and below fifty percent.\footnote{For a discussion of regression discontinuity designs, see Imbens and Lemieux (2008) and Lee and Lemieux (2010). See Pettersson-Lidbom (2008) for a regression discontinuity design that also uses fifty percent seat share for the largest party as the discontinuity.} As can be seen in Panel B, there is a discontinuity in the relationship between the largest party’s seat share and capital account liberalization when the seat share of the largest party switches from just under fifty percent to just over fifty percent. Most of the negative relationship seen in Panel A
between largest party size and financial liberalization appears to be driven by the discontinuity at fifty percent seat share shown in Panel B.\textsuperscript{17}

The analyses presented in Panels A and B are bivariate whereas Brooks and Kurtz’s analyses include a series of control variables. To ensure that the discontinuity portrayed in Panel B is not the result of omitted variables, we implement a regression discontinuity model examining the relationship between largest party seat share and the residuals from Brooks and Kurtz’s preferred model, which is replicated as Model 1 in Table 1 and discussed more extensively below. We report the results of the regression discontinuity model in Figure 2 Panel C. The discontinuity in the effect of largest party seat share on financial liberalization becomes more significant after the control variables Brooks and Kurtz include are accounted for. Brooks and Kurtz’s preferred model significantly under-predicts financial liberalization when there is a large party that is near to majority status but does not have a legislative majority, and over-predicts it in cases in which a single party holds a narrow majority in the legislature.\textsuperscript{18}

This discontinuity around majority party status is consistent with Brooks and Kurtz’s underlying theory but is not properly captured by seat share fragmentation. As seen in the replications and extensions of Brooks and Kurtz’s analyses reported in Table 1, seat share fragmentation is a weaker and less robust predictor of capital account liberalization than bargaining power fragmentation (the inverse of ENRP) or even a simple dichotomous variable indicating no majority party.

\textless Table 1 about here\textgreater

\textsuperscript{17} This discontinuity is not quite statistically significant at the optimal bandwidth level, 0.08 (which minimizes MSE, see Imbens and Kalyanaraman 2009), although it is significant when the bandwidth is 0.13 or greater.

\textsuperscript{18} The statistical significance of the discontinuity in this model is quite robust across alternative bandwidth specifications.
Table 1 Model 1 shows the full model replicating Brooks and Kurtz’s main finding: higher levels of *seat share fragmentation* are significantly related to greater capital account openness. Model 2 replaces *seat share fragmentation* with *bargaining power fragmentation*. Model 3 shows comparable results replacing *seat share fragmentation* with *no majority party*. As expected, the effects of both *bargaining power fragmentation* and *no majority party* are estimated with greater confidence than *seat share fragmentation*. Indeed, as Models 4 and 5 show, when *seat share fragmentation* is included in the same model with either *bargaining power fragmentation* or *no majority party*, the coefficient of *seat share fragmentation* is cut in half and the variable is no longer statistically significant at conventional levels, while the coefficients of the two variables that better capture the legislative bargaining situation are largely unchanged and remain significant.

Although this finding calls into question the appropriateness of the use of *seat share fragmentation* in Brooks and Kurtz’ analysis, it strengthens support for their underlying mechanism. Measures that more directly capture the discontinuous effect of party size on the legislative bargaining situation, and thus on parties’ ability to avoid blame, have a more robust effect on the likelihood of capital account liberalization. This replication illustrates what we believe is a fairly common pattern in analyses that rely on ENP or other measures based on legislative seat share: legislative seat share measures are comparatively noisy proxies for legislative power dispersion. Using seat share measures to capture the dispersion of power in legislatures rather than bargaining power measures results in less precisely estimated coefficients.

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19 Brooks and Kurtz conduct a Prais-Winston regression with panel-corrected standard errors and adjust for panel-specific AR-1 auto-correlation with country-level fixed effects.
Bernhard, Nordstrom and Reenock on Democratic Survival

While it may seem natural to consider the effect of the number of legislative parties in analyses of legislative policymaking, scholars have long argued that the number of parties plays an important role in a wide range of broader political outcomes as well. This has been perhaps most notable in the literature on the democratic survival of presidential regimes. Prominent amongst Linz’s critique of presidentialism is his argument that presidential systems with multiparty legislatures are prone to stalemate and coordination problems (Linz 1994). Similarly, Mainwaring (1993) identifies presidentialism and multipartism as potentially a “difficult combination” for democratic survival (see also Mainwaring and Shugart 1997).

In a 2001 article, Bernhard, Nordstrom and Reenock (hereafter BNR) build on these arguments, and on the long line of research investigating the effect of economic performance on democratic survival (e.g. Linz 1978, Przeworski and Limongi 1997), by examining the interaction between institutional and economic factors in democratic survival. BNR find that political systems with more concentrated political power increase governments’ ability to respond to economic crises. In particular, BNR argue that “majoritarian systems should fare better under conditions of crisis because their ability to concentrate power should allow them to formulate politically coherent policy responses to crisis….pluralist systems with their propensity to disperse power are much more likely to deadlock, making them more prone to break down.” (BNR 2001 781-2).

BNR discuss extensively their choice of institutional/party variable (see pp. 786-89, esp. fn 23). Building on literature that identifies qualitative differences in party

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20 BNR also consider a second hypothesis about pluralist systems doing better than majoritarian in economic good times that we do not consider in detail here.
systems (e.g. Sartori 1976), BNR use ENP as a basis to categorize party systems into four types: predominant party, two-party, moderate multi-party and extreme multi-party systems. While noting that their approach is clearly a rough proxy for their underlying concept of interest, BNR identify predominant party systems as those with fewer than 1.50 effective parties, two-party systems as having between 1.50 and 2.49 effective parties, moderate multiparty systems as having 2.50 to 3.99 effective parties and extreme multiparty systems as having more than 4.00 effective parties. This party system classification is combined with regime type (presidential or parliamentary) to create a five-point ordinal variable to capture a range of systems from majoritarian to pluralist.  

This measure represents a thoughtful approach to creating a unidimensional variable that encompasses both legislative fragmentation and regime type. However, it is important to highlight three particular weaknesses of this measure. First the translation of a two-dimensional map of concepts into a unidimensional ordinal variable has the potential to create spurious results or mask relevant findings. For example, the measure artificially ensures that all parliamentary systems with an ENP greater than 2.5 are in the same category as all presidential systems with an ENP below 2.5.  

Second, moving from a continuous variable to a discrete variable arbitrarily ensures that the measure identifies systems with 3.99 effective parties differently from one with 4.00 effective parties but

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21 The five point scale is coded as follows: a majoritarian system is a parliamentary system in which ENP<1.50, a quasi-majoritarian system is a parliamentary system in which ENP ranges from 1.50 to 2.49, Mixed systems are parliamentary systems in which ENP>2.50 or presidential systems in which ENP<2.50. Quasi-pluralist systems are presidential systems in which ENP ranges from 2.50 to 3.99 and pluralist systems are presidential systems in which ENP>4.00.

22 Although we do not necessarily disagree with BNR that multiparty parliamentary systems may behave similarly to predominant party and two-party presidential systems in certain ways, we would recommend using measures that do not a priori assume this point.
identically to parties with 2.50 effective parties. Finally, and most crucially for the point we wish to make, ENP does not always effectively capture concentration or dispersion of power, which is the central theoretic mechanism BNR, and other scholars in this literature, highlight. Because BNR focus on the effect of power dispersion in a legislature (and how that affects bargaining with a president), we recommend a measure that weights parties by bargaining power rather than seat share, i.e. one that is sensitive to how difficult it is to form a winning legislative coalition.

In their analyses, BNR interact their five-point ordinal scale of institutional form with economic performance to test their argument that pluralist systems have a greater propensity for democratic breakdown in the face of poor economic conditions. BNR made the data used in these analyses available to us and we were able to successfully replicate their model specification and results. BNR model the hazard rate of democratic failure using continuous-time parametric models and fit with a Weibull survival function using an accelerated failure-time metric. In our results in Table 2, our replications are based on BNR’s preferred Model 2 from their Table 1.

We present the central results from BNR in In Model 1 of Table 2. There is a statistically significant interaction between institutional form and economic performance

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23 BNR carefully discuss why they choose the cutoffs they do, but their discussion does not obviate the risks of using cutpoints in these data, and it is not clear that the cutpoints chosen are naturally occurring within the data. For example, there are more than 150 observations in the BNR sample that fall between ENP=2.40 and ENP=2.59, and are roughly continuously distributed across that range. Those falling from 2.40-2.49 are categorized as two-party systems while those from 2.50 to 2.59 are categorized as moderate multiparty.

24 In our analyses, we were able to replicate the published results for BNR’s Table 1 Model 1 exactly, but not the published results for certain variables in Models 2-4 due to what seem to be transliteration or copyediting errors in the publication process. BNR warned us about this when sharing their data, and we found that the interpretations in the text of BNR’s article and the post-estimation results in their Table 2 and Figure 3 were calculated based on the correct coefficients in the underlying models, rather than the misreported coefficients.
in the model.\textsuperscript{25} Recalling that a hazard ratio of 1 means no change, Model 1 suggests that the effect of a change in economic performance on democratic survival is indeed conditional on institutional type. In Figure 3 Panel A we calculate the marginal effect of a decline in economic performance (a change from the 95\textsuperscript{th} to the 5\textsuperscript{th} percentile in economic growth). These results suggest that while low economic growth does not significantly affect democratic survival under quasi-majoritarian and majoritarian systems, in pluralist, quasi-pluralist and mixed institutional systems a decline in economic performance is significantly associated with decreased democratic survival. As the quasi-majoritarian and majoritarian categories are entirely composed of parliamentary systems, these results suggest that the difference across categories may reflect differences between presidential and parliamentary regime types rather than in power concentration, and raises concerns about the unidimensionality of institutional form.

<Figure 3 About Here>

In Models 2 and 3 we examine these concerns by examining how institutional form performs in parliamentary (Model 2) and presidential (Model 3) subsamples. Institutional form ranges from 1 to 3 (majoritarian to mixed) in parliamentary systems and 3 to 5 in presidential systems (mixed to plurality). The results from Model 2 do not provide support for BNR’s argument (see Figure 3 Panel B). Although parliamentary regimes represent 75\% of the observations in the sample, there is not a significant relationship between institutional form and economic performance within this subsample. Rather, as Model 3 shows, the results showing the interaction between institutional form and economic performance in the full sample appear to be driven by the much stronger

\textsuperscript{25} We depart from BNR’s reporting of coefficients and instead report hazard ratios, which have become more commonly accepted in reporting hazard models in the time since BNR’s article was published.
relationship between institutional form and economic performance in the presidential subsample (see Figure 3 Panel C).

The lack of a statistically significant relationship between institutional form and economic performance in the parliamentary subsample may mean that variation in economic conditions in parliamentary regimes has no effect on democratic survival when conditioned on institutional form. Alternatively, due to the potential loss of information engendered by the move from a continuous measure to discrete categories, and by the use of a seat share measure rather than a bargaining power measure to capture bargaining complexity, the results from Model 2 might mean that institutional form is a poor proxy for BNR’s underlying theory. In Model 4 we replace institutional form with ENP interacted with regime type. The results are substantively similar to those using institutional form, as shown in Figure 4 Panel A.

In presidential systems, reducing economic performance from its 95th to its 5th percentile significantly lowers the probability of democratic survival when there are more than 1.7 effective parties in the legislature. Conversely, declining economic performance only significantly lowers democratic survival in a parliamentary system when there are more than 5.5 effective parties in the legislature—a relatively rare circumstance characterizing fewer than 6% of the observations in a parliamentary system. These weak results for parliamentary systems represent not only a smaller substantive effect, but the also fact that this effect is not estimated with great confidence.

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26 We use a set of two-way interactions to make the results more readily apparent in Table 3, but the results for three-way interactions between regime type, number of parties and economic growth are quite similar and are available from the authors.
In Model 5, we include *ENRP* rather than *ENP*. While at first glance the results in Model 5 appear quite similar to those in Model 4, the differences in the effect of the interaction between the number of parties and economic performance on parliamentary systems is noticeably different, as can be seen in Figure 4 Panel B. Moving to a measure of the effective number of relevant parties does not markedly alter the results for presidential systems—the effect of a decline in economic growth from its 95% to its 5% percentile significantly reduces democratic survival when the effective number of relevant parties is greater than 1.4, an effect quite similar to that found for *ENP*.\(^{27}\)

However, under parliamentary systems, the effect is substantively larger and much more precisely estimated when using *ENRP* rather than *ENP*. When there are at least 2.4 effective relevant parties (roughly 40% of parliamentary systems), reducing economic growth significantly lowers the likelihood of democratic survival in parliamentary systems.\(^{28}\)

As in our replication of Brooks and Kurtz, our replication of BNR suggests that scholars’ analyses can be substantially strengthened by using measures of the number of parties that weight parties by bargaining power rather than seat share. BNR’s core argument is that greater dispersion of power makes it more difficult for political actors to successfully manage economic crises and thus there should be an interaction between dispersion of power and economic downturns that increases the risk of democratic breakdown. Unfortunately, their results do not support this argument in parliamentary systems.

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\(^{27}\) Each of these results indicates that a declining economic performance increases the likelihood of democratic failure in presidential systems except in majority or near-majority situations.

\(^{28}\) In BNR’s sample, *ENP, ENRP* and BNR’s *Institutional Form* variable all correlate at greater than 0.80 in presidential systems, however the correlations amongst these variables are much weaker in the parliamentary systems: *ENRP* and *Institutional Form* only correlate at 0.54, *ENP* and *Institutional Form* correlate at 0.61. This difference in the correlations, along with the smaller estimated effect in parliamentary systems, may be why ENP and BNR’s institutional form variables do not have the expected effect in the parliamentary subsample, but why they do have similar effects in the presidential subsample.
systems, which comprise three-fourths of their sample. Using ENRP rather than ENP or BNR’s institutional form variable provides substantially improved estimates of the interaction between number of parties and economic conditions, suggesting that this relationship holds in both presidential and parliamentary systems.

Discussion

The number of political parties in a legislature matters for politics and policymaking, and as such it should come as no surprise that how we count the number of parties in a legislature matters for our analyses of politics and policymaking. This paper is an attempt to convince scholars to adopt measures of the number of legislative parties that comport more closely with their underlying theoretic arguments. We have discussed the limitations of the dominant measure used, the effective number of parties weighted by legislative seat share, highlighting in particular how ENP can be a poor proxy for dispersion of legislative power. We have focused on measures that weight the number of parties by bargaining power rather than seat share as a valuable alternative measure for scholars to use, and as data availability is a key determinant of what measures scholars use, we have created a dataset with these measures for democratic elections from 1946-2000 across more than 115 countries and 800 elections, extending Golder (2005).

In replicating and extending two analyses we have found that although scholars frequently rely on seat-share weighted measures, these results can be improved by considering alternative measures that better capture the legislative bargaining situation, such as the effective number of relevant parties (ENRP), bargaining power fragmentation (the inverse of ENRP), or even simply a dichotomous variable indicating the presence or
absence of a majority party. In our replication and extension of Brooks and Kurtz (2007), we found that party size had a clear discontinuous effect in explaining capital account liberalization, as one might expect given their underlying theoretic argument. As such, in multivariate analyses replacing seat share fragmentation with either bargaining power fragmentation or a dichotomous majority party variable improved the model.

In our replication and extension of Bernhard, Nordstrom and Reenock (2001), we found that BNR’s results were mostly insignificant in parliamentary systems, both when using their ordinal institutional type measure and when replacing that measure with ENP. However, moving to a bargaining power weighted measure such as ENRP revealed a significant interaction between economic performance, the number of legislative parties and democratic survival in parliamentary systems, albeit an effect that is not as large substantively as that found in presidential systems.

As with almost all measures, any method of counting legislative parties will imperfectly capture underlying theoretic concepts. However, many scholars in comparative politics and political economy use measures of the number of parties that weight parties by seat share, despite having an underlying theory focused on the legislative bargaining situation, for which the effective number of legislative parties is only a rough proxy. In the future, when scholars wish to consider the effects of dispersion of power in a legislature, we hope that they will consider relying on measures that recognize the discontinuity between seat share and bargaining power.
Figure 1. Scatterplot of ENP and ENRP in 805 Elections Over 117 Countries, 1946-2000.
Figure 2. Discontinuous Effect of Largest Party Seat Share on Capital Account Liberalization

A. Capital Account Liberalization by Largest Party Seat Share

B. Capital Account Liberalization by Largest Party Seat Share, Regression Discontinuity

Difference at Discontinuity: -0.71 (0.46)

C. Residuals from Brooks and Kurtz’s Model by Largest Seat Share, Regression Discontinuity

Difference at Discontinuity: -0.41 (0.19)*

* Data points, fitted regression line, *p<0.05, standard errors in parentheses.
Figure 3. Marginal Effect of Change in *Economic Growth* on Democratic Failure Hazard Ratio as *Institutional Form* varies.

A. Full Sample (Table 2 Model 1)

B. Parliamentary Subsample (Table 2 Model 2)

C. Presidential Subsample (Table 2 Model 3)
Figure 4. Marginal Effect of Change in Economic Growth on Democratic Failure Hazard Ratio as ENP and ENRP vary.

A. ENP x Parliamentary (Table 2 Model 4)  

B. ENRP x Parliamentary (Table 2 Model 5)
Table 1: The Determinants of Capital Account Openness (Brooks and Kurtz 2007)

<table>
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<tr>
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<th>4</th>
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<td>Seat Share Fragmentation</td>
<td>0.83 *</td>
<td>0.48</td>
<td>0.44</td>
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<td></td>
<td>(0.41)</td>
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<td>Bargaining Power Fragmentation</td>
<td>0.39 **</td>
<td>0.35 **</td>
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<td>(0.13)</td>
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<tr>
<td>No Majority Party</td>
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<td>0.29 **</td>
<td>0.26 **</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>(0.09)</td>
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<td></td>
</tr>
<tr>
<td>Partisanship of Executive</td>
<td>0.08 ^</td>
<td>0.09 *</td>
<td>0.08 ^</td>
<td>0.09 *</td>
<td>0.07 ^</td>
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<tr>
<td></td>
<td>(0.05)</td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.04)</td>
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<td>Current Account as a % of GDP</td>
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<td>0.02 *</td>
<td>0.02 *</td>
<td>0.02 *</td>
<td>0.02 *</td>
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<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
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<tr>
<td>External Debt as a % of GDP</td>
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<td>-0.56 *</td>
<td>-0.57 *</td>
<td>-0.54 **</td>
<td>-0.55 *</td>
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<tr>
<td></td>
<td>(0.21)</td>
<td>(0.23)</td>
<td>(0.23)</td>
<td>(0.22)</td>
<td>(0.22)</td>
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<td>-0.01</td>
<td>0.00</td>
<td>0.00</td>
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<td></td>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
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<tr>
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<td></td>
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<td>(0.01)</td>
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<td>GDP (natural log)</td>
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<td>-1.70 *</td>
<td>-1.65 *</td>
<td>-1.59 *</td>
<td>-1.55 *</td>
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<td></td>
<td>(0.73)</td>
<td>(0.74)</td>
<td>(0.75)</td>
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<td>GDP per capita</td>
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<td>(0.22)</td>
<td>(0.21)</td>
<td>(0.22)</td>
<td>(0.21)</td>
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<td></td>
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<td>(8.47)</td>
<td>(8.43)</td>
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<td>(8.34)</td>
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<td>-4.41</td>
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<td>(6.01)</td>
<td>(6.19)</td>
<td>(6.02)</td>
<td>(6.21)</td>
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<td>Capital Account Liberalization, t-1</td>
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<td>0.61 **</td>
<td>0.59 **</td>
<td>0.61 **</td>
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<td>(0.09)</td>
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<td>0.11 **</td>
<td>0.11 **</td>
<td>0.11 **</td>
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<td>(0.24)</td>
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<tr>
<td>Constant</td>
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<td>35.72 *</td>
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<tr>
<td></td>
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<td>(17.18)</td>
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<td>(16.73)</td>
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^ p<0.1, * p<0.05, ** p<0.01. Standard errors in parentheses
Table 2: Determinants of Democratic Survival (Bernhard, Nordstrom and Reenock 2001)

<table>
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<td>Institutional Form</td>
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<td>(0.53)</td>
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<tr>
<td>Economic Growth</td>
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<td>1.01</td>
<td>1.45 *</td>
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<td>(0.07)</td>
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<td>(0.26)</td>
<td>(0.05)</td>
<td>(0.04)</td>
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<td>Institutional Form x Economic Growth</td>
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<td>0.98</td>
<td>0.88 *</td>
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<td></td>
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<tr>
<td></td>
<td>(0.02)</td>
<td>(0.04)</td>
<td>(0.05)</td>
<td></td>
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<tr>
<td>Number of Parties (Pres)</td>
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</tr>
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<td></td>
<td></td>
<td>(0.14)</td>
<td>(0.13)</td>
</tr>
<tr>
<td>Number of Parties (Pres) x Economic Growth</td>
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<td>0.96 *</td>
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<td>(0.02)</td>
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<td>Number of Parties (Parl)</td>
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<td>(0.12)</td>
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<td>(1.00)</td>
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<td>(4.67)</td>
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<td>5.71 **</td>
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<td>(23.65)</td>
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<td>0.03 **</td>
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<td>0.05 **</td>
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<td>Past Attempts at Democracy</td>
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^ p<0.1, * p<0.05, ** p<0.01. Standard errors in parentheses
References


