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Socioeconomic Development and Party System Fragmentation Cross-Nationally

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Abstract

The literature examining the number of parties cross-nationally has focused extensively on the impact of electoral systems; the study of social cleavages is, by comparison, less well-developed. While a sizable body of research has examined the effects of ethnic and other measures of diversity, other cleavages have received less attention. This paper focuses on the impact of socioeconomic development—reflecting class and urban-rural cleavages—on party system fragmentation. Examining a large cross-national data set, the analysis shows that, in line with the expectations of social cleavage theory and independently of other social cleavage variables, socioeconomic development is associated with higher levels of party system fragmentation.

Key Words

Social Cleavages; Socioeconomic Development; Urbanization; Urban-Rural Cleavages; Class Cleavages; Party Systems; Party System Fragmentation; Electoral Systems

In studying the determinants of party system fragmentation cross-nationally, a long line of research building on the work by Duverger (1954) argues that party system fragmentation is determined by two sets of variables. One set of variables—emphasized by most research—regards properties of the electoral system, while the other is the social context giving rise to the formation of political parties. Although a considerable body of research has examined the impact of electoral systems (see, *e.g.*, Rae 1971; Cox 1997; Shugart and Taagepera 2017), the research examining the effects of social diversity on party system fragmentation in cross-national perspective is comparatively less well-developed. Most of this literature to date has focused exclusively on ethnic diversity (*e.g.*, Ordeshook and Shvetsova 1994; Amorim Neto and Cox 1997; Clark and Golder 2006). Though ethnic diversity is an important variable that is (relatively) easy to measure in cross-national studies, using one measure of diversity as a proxy for social diversity writ large is problematic (Stoll 2008).

Two important social cleavages that have not received sufficient attention in previous cross-national studies of party system fragmentation are the urban-rural and class cleavages. Although these variables are viewed as central to understanding the development of party systems in Western Europe (Lipset and Rokkan 1967; Rokkan 1970; Bartolini and Mair 1990; Kitschelt 1997), the importance of class and urban-rural cleavages has been challenged as inapplicable—or at least Western-centric—in newer democracies (Young 1986; Dix 1989; Lipset 1994; Elster, Offe, and Preuss 1998; Randall 2001; Erdmann 2004). This disagreement magnifies the need to examine the impact of these cleavages on party system fragmentation in truly cross-national perspective. Yet, while some studies have examined class and/or urban-rural cleavages as determinants of party system fragmentation (Bartolini and Mair 1990; Anckar 2000; Raymond 2016a; see also Dahl and Tufte 1973, 98-100), these studies have been restricted to Western democracies.

In this study, we examine the impact of class and urban-rural cleavages on party system fragmentation in broad, cross-national perspective. Using a measure of socioeconomic development capturing the important properties underpinning urban-rural and class cleavages identified by Lipset and Rokkan—urbanization and industrialization—we test the argument that higher levels of socioeconomic development lead to more fragmented party systems. To this end, we examine several measures of party system fragmentation using data from countries and elections around the world. This allows us to determine whether arguments regarding the impact of socioeconomic cleavages that were developed and applied to the study of Western party systems apply more broadly to party systems cross-nationally. If socioeconomic development is associated with more fragmented party systems, then this would suggest that social cleavage theory is more generalizable than its detractors claim. If not, then this would suggest that the importance of class and urban-rural cleavages is limited to Western party systems, while non-Western party systems must be understood with reference to an alternative set of explanations.

The next section reviews previous research regarding the impact of social cleavages on party system fragmentation and outlines the theoretical rationale behind the impact of socioeconomic development. Following that, we describe the data set and variables employed in the analyses before moving to a separate section detailing the results. A final section concludes with thoughts regarding the implications of the findings for future research.

Social Cleavages and Party System Fragmentation

The social cleavage approach to understanding the development of party systems centers on the four cleavages identified by Lipset and Rokkan (1967; Rokkan 1970) as formative in the

development of Western party systems: the center-periphery, church-state, urban-rural, and class cleavages.¹ The center-periphery cleavage arose in some countries as a consequence of the development of the state and the differences between those groups—*e.g.*, ethnic, religious, etc.—who had access to state power (the center) and those groups shut out of power (the periphery). The conflict between church and state resulted from tensions between the expanding secular state and established churches, as secular states sought to assert control over the churches, which the clergy and their adherents resisted (*c.f.*, Ertman 2009). The transition from agrarian to industrial economies produced, first, an urban-rural cleavage, and second, a class cleavage (Hobsbawm 1962; *ibid* 1964; Lipset and Rokkan 1967; Rokkan 1970). The urban-rural cleavage pitted the expanding pool of entrepreneurs profiting from the development of industrial production in the cities, as well as the petty bourgeoisie, against those continuing to profit off their landholdings, which included both the landed gentry and the peasantry. This cleavage gave rise to parties representing the interests of industrialists and the bourgeoisie, while the interests of the landed classes were represented either by agrarian parties (who focused primarily on the interests of peasants), conservative parties (who represented primarily the landed elite), or both. As economies expanded further due to industrialization, class cleavages formed in the cities between those in the middle classes, particularly those owning the means of production, and those in the expanding group of the population belonging to the working classes. This class cleavage pitted the liberal parties of the middle classes against socialist and other labor-based parties representing the working classes.

To explain party system fragmentation, social cleavage theory argues that the more cleavages that are present in a given society, the more parties there will be. To be sure, not every cleavage is present in every country, nor did every cleavage emerge at some point in each

country's history: in some countries, some cleavages present in earlier periods faded away or were absorbed by other cleavages (*e.g.*, Ertman 2009). Rather, it is variation in the presence/absence of those cleavages that became “frozen” (see Mair 2001) which explains why some countries have more fragmented party systems than others.

Previous research examining the determinants of party system fragmentation cross-nationally has incorporated elements of the center-periphery cleavage into models of party system fragmentation. Most notable is the center-periphery cleavage reflected by ethnic diversity (Ordeshook and Shvetsova 1994; Amorim Neto and Cox 1997; Clark and Golder 2006; Singer and Stephenson 2009), though some research has also examined the impact of religious diversity (Vatter 2003; Raymond 2016b). While previous research has done well to incorporate measures of center-periphery cleavages into cross-national models of party system fragmentation given the challenges of measuring even simple concepts in a consistent manner from one country to the next (Alesina et al. 2003; Stoll 2008), most studies have not accounted for the urban-rural and class cleavages. While some research has incorporated class and/or urban-rural cleavages as part of a broader measure of social diversity (*e.g.*, Stoll 2013; Potter 2014), or as part of the number of issue/ideological divides reflecting the social cleavages present in society (*e.g.*, Taagepera and Grofman 1985; Stoll 2011), these measures do not permit direct tests of the argument that changes to the socioeconomic structure impact party system fragmentation independently of other social cleavages.

The evidence we do have regarding the impact of the urban-rural and class cleavages on party system fragmentation suggests that urbanization and industrialization produced more fragmented party systems in Western Europe (Bartolini and Mair 1990; Raymond 2016a). Assuming this model can be generalized, this would suggest that other countries experiencing

urbanization and industrialization will undergo similar fragmentation of their party systems. It remains to be seen, however, to what extent the effects of urban-rural and class cleavages on party system fragmentation—or social cleavage theory more generally—are applicable outside the West.

One of the principal challenges to studying party systems in developing countries is the degree to which parties and party systems are institutionalized. Previous research has long noted that political parties in developing systems are far less institutionalized (Huntington 1968; Panebianco 1988; Mainwaring and Scully 1995), which has important consequences for the party system that result in levels of electoral volatility so high as to question the degree to which a party *system* exists (Roberts and Wibbels 1999; Kuenzi and Lambright 2001; Mozaffar and Scarritt 2005; Bogaards 2008). Although this volatility poses potential challenges for studying party system development in new democracies, other research suggests that party systems in developing countries retain essential properties that allow them to be analyzed in similar fashion to party systems in Western countries. To the extent data are available, political parties in many developing countries show much clearer, more consistent issue/ideological positions than would be expected given levels of electoral volatility in these countries (*e.g.*, Rosas 2005; Zoco 2006; Rohrschneider and Whitefield 2009; Whitefield and Rohrschneider 2015). Moreover, despite high levels of volatility, previous research shows that voters are better able to vote strategically and coordinate on the most viable candidates with each successive election (*e.g.*, Tavits and Annus 2006; Lago and Martínez 2012; Moser and Scheiner 2012), resulting in less electoral volatility (*e.g.*, Tavits 2005; Bischoff 2013).

Beyond the concerns with party system institutionalization, several studies have cautioned against applying social cleavage theory to other contexts (*e.g.*, Young 1986; Dix 1989; Lipset

1994; Elster, Offe, and Preuss 1998; Randall 2001; Erdmann 2004), noting that economic and political development in many countries have followed different courses to the developments experienced in Western Europe. While there has been a general trend among developing countries since the end of the Second World War towards both urbanization and industrialization (Cohen 2006; Henderson 2010), these trends have not been experienced to the same degree everywhere. In particular, many African countries experienced deindustrialization and reduced agricultural output in the three decades following independence (Hyden 2006, 146-150, 219-221; Sampath 2014). Moreover, in resource-exporting countries, urbanization has not coincided with the development of a sizable manufacturing sector (Gollin et al. 2016). As a result of these differences, the regional and other, more local contexts and political histories experienced by developing countries might prevent the emergence of urban-rural and class cleavages similar to those that appeared in the West.²

Despite these concerns, however, some research has shown that social cleavages structure the voting behavior of electorates in developing countries to much the same degree as in established democracies (*e.g.*, McAllister 2007; McAllister and White 2007; Mainwaring et al. 2015). While social cleavages may not impact voting behavior to the same degree as in Western democracies in developing democracies' founding elections, some research shows that the effects of social cleavages begin to approximate those seen in the West after the first few elections (*e.g.*, Evans and Whitefield 2006). Thus, there is reason to believe that the aspects of social cleavage theory relating to the impact of urban-rural and class cleavages on party system fragmentation are fundamentally generalizable. Although the sequence of economic development has proceeded in different steps in different countries, this does not negate the fundamental prediction emerging from social cleavage theory—that

socioeconomic development will be associated with higher levels of party system fragmentation. Countries experiencing low levels of socioeconomic development will, net of the impact of other social cleavages on party system fragmentation, tend to be associated with lower levels of party system fragmentation than more developed countries due to the absence of urban-rural and class cleavages stimulating the development of parties. As countries urbanize, social cleavage theory predicts that party system fragmentation will increase, as separate parties form to represent the interests of urban and agrarian voters along an urban-rural cleavage. As countries industrialize, social cleavage theory predicts that the party system will fragment further as socialist and other labor parties emerge to compete with liberal bourgeois parties along the class cleavage. Thus, the result of these processes of socioeconomic development is that countries' party systems will become more fragmented as urbanization and industrialization give rise to urban-rural and class cleavages that produce new parties representing each side of these expanding cleavages.

Description of the Data

To test the argument that socioeconomic development results in increased party system fragmentation, we examine data from elections around the world. Combining data from Golder (2005) and Bormann and Golder (2013), we examine legislative elections around the world between 1946 and 2007. Even after all controls are added and cases dropped due to missing data,³ most models include legislative elections from more than 80 countries on every continent around the world.

We examine the relationships between socioeconomic development and several commonly used measures of party system fragmentation. We start by examining the widely-used effective number of electoral parties (Laakso and Taagepera 1979). This variable measures

the number parties competing in elections after adjusting for each party's vote share—so as not to overstate the degree of fragmentation that is due to smaller parties receiving few votes (which do not matter much for electoral politics). This variable uses the formula

$$ENEP = 1/\sum_{i=1}^n p_i^2,$$

where n is the number of i parties receiving vote shares p . To put it another way, the effective number of electoral parties (ENEP) is simply 1 divided by the sum of squared vote shares for each party. Because several smaller parties are reported in one residual (“other”) category in some countries, we use Taagepera's (1997) correction to estimate the true level of fragmentation in these countries. Descriptive statistics for this and the other variables examined in the analysis appear in Table 1.

Table 1 about here

In addition to this variable, we also examine three other measures of party system fragmentation. To determine whether socioeconomic development leads not only to a fragmentation of votes, but also seats going to parties winning representation in the legislature, we also examine the effective number of parliamentary parties (ENPP). This variable is calculated the same way as with ENEP, though substituting seat shares in place of vote shares.

Because the national-level fragmentation of votes may not reflect the fragmentation of votes at the district level (*e.g.*, Cox 1999; *c.f.*, Moser and Scheiner 2012), we also examine a third measure of party system fragmentation using the mean district-level values of ENEP in each country in each election using data from the Constituency-Level Election Archive (Kollman et al. 2016). As social diversity increases, party system fragmentation in the average district

should increase as parties representing the working and middle classes compete alongside parties representing urban-rural and other cleavages. While fragmentation may vary from district to district depending on the relative distribution of voters belonging to each of the major classes, higher levels of socioeconomic development should result in higher levels of fragmentation in the *average* district.

Finally, we also examine the percentage of the vote won by the largest party. Examining the vote shares won by the largest party in each country allows us to determine whether any fragmentation seen in the two aforementioned measures of vote fragmentation result due to a reduction in the vote shares of the largest party in each country (reflecting widespread fragmentation of the vote), or whether such fragmentation is due merely to the proliferation of small opposition parties that do not undermine the tendency towards duopoly in elections (particularly in countries using single-member districts). Examining this measure tests social cleavage theory's prediction that higher levels of socioeconomic development will be associated with lower vote shares won by the largest party. Data measuring the percentage of the vote won by the largest party are taken from the Database of Political Institutions (Keefer and Stasavage 2003).

To measure socioeconomic development, we use the index of occupational diversification produced by Vanhanen (2003a; *ibid* 2003b). The index of occupational diversification is measured as the mean of two variables: the percentage residing in urban areas and the percentage employed in non-agricultural occupations.⁴ In this way, this variable captures the two processes of the industrial revolution: urbanization, and the modernization of employment resulting from industrialization. As a result, higher values reflect greater levels of socioeconomic development. As people leave their agricultural occupations in the

countryside and move into non-agricultural occupations in the cities, cleavages between urban and rural on the one hand and middle and working classes on the other will form—which, in turn, make organization and political representation along these cleavage lines possible. Thus, social cleavage theory would predict that higher levels of occupational diversification—reflecting the emergence of urban-rural and class cleavages—will result in the formation of parties representing each cleavage which, in turn, will lead to higher levels of party system fragmentation.⁵

We include several control variables to account for alternative explanations of party system fragmentation that may render the estimated relationships between socioeconomic development and each measure of party system fragmentation spurious. Four controls relate to the electoral system. One is average district magnitude (the number of seats elected per district).⁶ We include the mean district magnitude used to elect the country's lower house (in the case of bicameral legislatures, and the only house in the case of unicameral legislatures).⁷ This controls for the possibility that party system fragmentation will be higher in countries with higher mean district magnitudes.⁸

A second variable measures the percentage of seats awarded in a proportional upper tier. Previous research (*e.g.*, Amorim Neto and Cox 1997; Clark and Golder 2006) has included this variable to account for countries electing representatives using more than one system (*i.e.*, tier). The higher the percentage of seats elected in a proportional tier, the more fragmented the party system is expected to be.

A third variable measures the national vote thresholds required for parties to win before they are eligible for seats in the legislature. Countries with higher vote thresholds may have lower

levels of party system fragmentation: because thresholds make it harder for small parties to win seats, higher thresholds reduce the incentives for the formation of parties appealing to few voters that, in turn, will result in these parties failing to win seats. As a result, this disincentive may result in lower levels of party system fragmentation (*c.f.*, Moser 1999; Pellicer and Wegner 2014).

A fourth variable measures countries using two-round electoral systems requiring that parties receive a majority of the district vote to be elected on the first ballot (absent a majority, run-off elections are held). Because these electoral systems reduce the incentives to vote tactically on the first ballot (Cox 1997, chapter 6), two-round systems may have higher levels of party system fragmentation than single-member district plurality systems. Countries using these electoral systems are coded one, and zero otherwise.

We also include variables measuring countries with multiple levels of government. Previous research suggests that third parties—even in single-member district plurality systems—are more likely to form and attract votes in countries electing representatives to legislatures at different levels of government (*e.g.*, federal and sub-national legislatures). This is because the differences in responsibility between legislatures make it harder for the two largest parties to represent all competing interests coherently, thus opening the space for third parties to compete effectively in certain regions. This applies not only to federal systems (Chhibber and Kollman 1998), but member states of the European Union as well, where elections at national and European levels create opportunities for third parties that are similar to federal systems (see Gaines 2009). To account for these possibilities, we include separate variables coded one for federal systems/EU member states, and zero otherwise.

To capture the impact of presidential systems on legislative party system fragmentation, we include a dummy variable coded one for presidential and mixed presidential/parliamentary systems (and zero otherwise). We also include a variable measuring the effective number of presidential candidates (ENPRES), which is measured using the same formula as the effective number of parties competing in legislative elections. Due to possible contagion effects from presidential to legislative elections, more fragmented presidential party systems may be associated with more fragmented legislative party systems (see, *e.g.*, Amorim Neto and Cox 1997; Clark and Golder 2006; Elgie et al. 2014). Interacting these two variables accounts for the possibility that the impact of presidential party system fragmentation is strongest in presidential systems and less so in parliamentary systems where the outcome of the race is less consequential for partisan politics.⁹

In addition to these institutional variables, we also include several control variables pertaining to the social cleavage structure of society. To account for the two center-periphery cleavages examined in previous research, we include separate variables measuring ethnic and religious diversity. Both are measured using data from Alesina et al. (2003). We take the measures of fractionalization reported by Alesina et al. and convert these into effective numbers of ethnic and religious groups.¹⁰ To measure the potential effect of church-state cleavages on party system fragmentation, we include a variable measuring countries with established state religions using data taken from Fox (2011; *ibid* 2015). This variable is coded one for countries with state religions, and zero otherwise.

Finally, we include a measure accounting for variation in party system fragmentation due to differences in the quality of democracy. Because voters in unfree elections may be less likely to express their true preferences than they would in fully-democratic elections, party system

fragmentation may be significantly lower in non-democratic elections than democratic elections. This variable is coded one for elections not meeting the democratic standards set out in Alvarez et al. (1996; Cheibub et al. 2010), and zero for elections meeting their criteria for classification as democracies.¹¹

Analysis

We estimate four models of legislative party system fragmentation, one for each dependent variable. To estimate each model, we use multilevel linear regression to account for the fact that some countries experience multiple elections in this data set, and thus elections are nested within countries.¹² Parameter estimates are presented in Table 2.

Table 2 about here

Even after accounting for the alternative explanations of party system fragmentation noted above, the results in Table 2 show that occupational diversification remains significantly associated with each measure of party system fragmentation. The positive coefficient in model 1 suggests that as socioeconomic development increases (*i.e.*, as countries urbanize and shift away from agricultural labor), national-level party systems become more fragmented, while the positive coefficient in model 3 suggests that socioeconomic development also results in party system fragmentation at the district level (*i.e.*, in the average district) as well. The negative coefficient in model 4 suggests that this fragmentation is due to the erosion of vote shares for the largest party in the country: as socioeconomic development increases, the vote shares won by the largest party in the country decrease. Even in model 2, examining the fragmentation of seat shares, the positive coefficient associated with occupational diversification implies that socioeconomic development leads to higher

levels of seat-share fragmentation. Thus, Table 2 provides evidence suggesting that socioeconomic development is robustly associated with party system fragmentation.

To visualize the substantive impact of socioeconomic development, we present a series of figures displaying the predicted values of each dependent variable across the range of occupational diversification. These appear in Figures 1-4, which correspond to the results in models 1-4. To produce each figure, we hold mean district magnitude to one and hold all other variables to their sample medians. The resulting figures allow us to examine the predicted levels of party system fragmentation in simulated parliamentary systems electing representatives in single-member districts.

The relationship between occupational diversification and national-level party system fragmentation (ENEP) seen in Figure 1 shows that party system fragmentation increases from 2.95 effective parties at the lowest observed levels of occupational diversification to 4.90 effective parties at the highest levels. These predicted values suggest that socioeconomic development has a considerable impact on the fragmentation of the party system: net of the other variables in these models, moving from the lowest to the highest levels of socioeconomic development results in nearly two new parties entering the electoral scene and competing alongside the existing parties—with these new parties being of roughly equal size to the two largest parties.

Figure 1 about here

Figure 2 presents the predicted relationship between occupational diversification and the fragmentation of seat shares in the legislature. The results in Figure 2 suggest that

socioeconomic development is associated with more fragmented seat shares. At the lowest levels of occupational diversification, effectively 2.38 parties win seats in the legislature; at the highest levels of occupational diversification, seats are divided among effectively 3.98 parties. In terms of the consequences of socioeconomic development for policymaking, this suggests that socioeconomic development makes legislative politics more complicated, as effectively four parties make producing legislative coalitions more complicated than is the case with roughly two parties in countries at lower levels of socioeconomic development.

Figure 2 about here

The relationship between occupational diversification and mean district-level party system fragmentation can be seen in Figure 3. Moving from the lowest to the highest levels of occupational diversification results in considerable fragmentation of votes at the district level, increasing from 1.38 effective parties at the lowest levels to 4.63 effective parties at the highest levels of occupational diversification. This increase of effectively three parties is even more profound than the increases observed at the national level in Figure 1. Figure 3, thus, suggests that socioeconomic development transforms lopsided district-level races at the lowest levels of occupational diversification—in which one party dominates the vote—into multiparty contests featuring effectively four or more parties attracting roughly equal vote shares at the highest levels of development. Considering that the predicted values in Figure 3 simulate mean district-level party system fragmentation in single-member district plurality systems, this finding suggests that socioeconomic development can produce and sustain multiparty competition in most districts despite the pressures of the electoral system working against the formation of multiparty systems.¹³

Figure 3 about here

Turning to the relationship between occupational diversification and the vote shares won by the largest party, Figure 4 suggests that the largest party's vote shares decrease with socioeconomic development. At the lowest levels of occupational diversification, the average party in electoral systems using single-member districts tends to win about 52 percent of the national vote; at the highest levels of occupational diversification, the largest party can expect to win roughly 34 percent of the vote, a decrease in vote share of 18 percentage points. This suggests that socioeconomic development produces higher levels of party system fragmentation in large part because the vote shares of the largest party are reduced, and the vote shares that would have gone to the largest party are redistributed across a wider range of opposition parties.

Figure 4 about here

Discussion and Conclusion

The results presented here suggest that previous research regarding the relationship between social cleavage diversity and party system fragmentation around the world has largely ignored an important explanation of party system fragmentation: socioeconomic development, reflecting the impact of urban-rural and class cleavages. While previous research has demonstrated the importance of ethnic and religious diversity for understanding variation in party system fragmentation, class and urban-rural cleavages have received scant attention in previous cross-national studies. Given differences in the levels of socioeconomic development around the world, understanding the development of class and urban-rural cleavages offers potential to explain considerable variation in party system fragmentation

around the world.

Using a measure of socioeconomic development reflecting differences in the development of class and urban-rural cleavages from one country to the next, the analysis above suggests that socioeconomic development is positively—and robustly—associated with several measures of party system fragmentation across a broad range of countries. The analysis showed that socioeconomic development was associated with party system fragmentation not only at the national level, reducing the vote share won by the largest party, but also at the district level. Not only did the analysis suggest that socioeconomic development results in more fragmented vote shares, the analysis also showed that higher levels of socioeconomic development were associated with more fragmented seat shares.

These results have important implications for future research. For one, they suggest that future studies of party system fragmentation should take class and urban-rural cleavages into account. While ethnic and religious diversity are important explanations of party system fragmentation, the results presented here suggest that explanations rooted solely in ethnic and religious diversity are incomplete.

Additionally, these results suggest that urban-rural and class cleavages have broader cross-national explanatory power than critics have suggested. While the seminal studies regarding the impact of social cleavages on the development of party systems are largely restricted to the electoral democracies of Western Europe, the analysis above suggests that the parts of social cleavage theory relating to the impact of class and urban-rural cleavages may have something to say about the evolution of party systems—past, present, and future—around the world. Although much of social cleavage theory regarding the impact of urban-rural and class

cleavages was developed around the history of countries in Western Europe, which experienced different sequences of political and socioeconomic development than those patterns seen in newer democracies, the results presented here suggest that the broader lessons of social cleavage theory regarding the impact of class and urban-rural cleavages on politics may apply to countries around the world.

Looking forward, this paper suggests that the current trends in many developing countries towards urbanization and diversification of employment will have profound effects on the development and fragmentation of those countries' party systems. Based on the findings presented here, we would expect to see party systems become more fragmented as economies develop and societies change in response to urbanization and economic diversification. Future research is needed to revisit the analysis and conclusions reached here to examine whether the party systems of newer democracies continue to fragment as their economies develop. If projections based on the analysis performed here—suggesting that socioeconomic development will result in more fragmented party systems—prove accurate and the party systems of developing countries continue to fragment with further socioeconomic development, then we would have considerable evidence to suggest that social cleavage theory provides a generalizable explanation of cross-national variation in party system fragmentation.

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Table 1: Descriptive Statistics

Independent Variables	Mean (S.D.)	Min-Max
ENEP (National)	3.97 (1.90)	1.23-14.13
ENPP	3.27 (1.49)	1.00-10.87
ENEP (District)	3.38 (1.31)	1.26-10.99
% Largest Party	38.80 (12.24)	7.45-76.3
Occupational Diversification	0.61 (0.20)	0.06-0.97
District Magnitude	13.15 (35.48)	1-450
% Seats in Upper Tier	6.45 (13.65)	0-74.05
Two-Round Systems	0.02 (0.14)	0-1
National Vote Threshold	1.20 (2.08)	0-10
Federal Countries	0.24 (0.42)	0-1
EU Members	0.13 (0.34)	0-1
Presidential Systems	0.27 (0.44)	0-1
ENPRES	1.18 (1.60)	0-8.65
Ethnic Diversity	1.70 (0.93)	1.00-14.33
Religious Diversity	2.24 (1.38)	1.00-5.69
Official Religion	0.24 (0.43)	0-1
Non-Democracy	0.02 (0.15)	0-1

Entries in the second column are sample means (standard deviations), while entries in the third column are minimum and maximum observed values.

Table 2: Multilevel Linear Regression Estimates of Legislative Party System Fragmentation

Independent Variables	Dependent Variable			
	ENEP (National) Model 1	ENPP Model 2	ENEP (District) Model 3	% Largest Party Model 4
Occupational Diversification	2.17 (0.46)**	1.77 (0.35)**	3.62 (0.34)**	-20.03 (4.09)**
District Magnitude	0.004 (0.003)	0.004 (0.003)	0.002 (0.002)	-0.04 (0.02)*
% Seats in Upper Tier	0.02 (0.01)**	0.02 (0.01)**	0.01 (0.01)*	-0.19 (0.05)**
Two-Round Systems	-0.52 (0.58)	-1.20 (0.42)**	-0.42 (0.62)	7.62 (5.16)
National Vote Threshold	0.02 (0.05)	-0.03 (0.04)	-0.03 (0.03)	0.17 (0.34)
Federal Countries	0.36 (0.43)	0.16 (0.33)	-0.47 (0.36)	-3.17 (2.61)
EU Members	-0.37 (0.19)*	-0.27 (0.15)+	-0.50 (0.12)**	2.53 (1.40)+
Presidential Systems	-2.14 (0.40)**	-0.71 (0.30)*	-0.63 (0.38)+	8.19 (3.33)*
ENPRES	0.13 (0.08)+	0.07 (0.06)	0.13 (0.06)*	-0.04 (0.61)
Presidential Systems $\times$ ENPRES	0.68 (0.13)**	0.22 (0.09)*	0.21 (0.11)+	-3.82 (1.06)**
Ethnic Diversity	0.23 (0.12)*	0.20 (0.08)*	0.49 (0.16)**	-1.14 (0.75)
Religious Diversity	-0.44 (0.15)**	-0.33 (0.11)**	-0.39 (0.12)**	2.43 (0.91)*
Official Religion	-0.71 (0.40)+	-0.26 (0.31)	-0.16 (0.29)	0.34 (2.51)
Non-Democratic Countries	-1.16 (0.48)*	-0.77 (0.32)*	-1.59 (0.53)**	9.00 (5.47)
Constant	3.21 (0.49)**	2.53 (0.37)**	1.12 (0.43)**	50.81 (3.60)**
σ^2 (Constant)	1.96	1.18	0.98	63.27
σ^2 (Residual)	1.23	0.80	0.46	48.88
R ² (Countries)	0.19	0.11	0.19	0.07
R ² (Elections)	0.19	0.11	0.22	0.11
n (countries)	84	91	65	81
n (total)	632	668	479	405

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.005$, two-tailed tests. Entries are multilevel linear regression coefficients (standard errors).

Figure 1: The Predicted Relationship between Occupational Diversification and National-Level Party System Fragmentation (ENEP – National)

Notes: the black line represents the predicted values of national-level party system fragmentation, while the area shaded in gray represents a 95% confidence interval.

Figure 2: The Predicted Relationships between Occupational Diversification and Legislative Seat Fragmentation (ENPP)

Notes: black line represents the predicted values of legislative seat fragmentation while the area shaded in gray represents a 95% confidence interval.

Figure 3: The Predicted Relationship between Occupational Diversification and Mean District-Level Party System Fragmentation (ENEP – District)

Notes: the black line represents the predicted values of mean district-level party system fragmentation, while the area shaded in gray represents a 95% confidence interval.

Figure 4: The Predicted Relationship between Occupational Diversification and the Largest Party's Vote Share

Notes: black line represents the predicted vote shares for the largest party, while the area shaded in gray represents a 95% confidence interval.

Appendix

In this Appendix, we demonstrate further the robustness of the findings presented in the main body of the text. Table 3 presents the coefficients associated with the variable measuring occupational diversification from several alternative specifications of the models presented in Table 2. For reference purposes, row 1 presents the coefficients from Table 2.

Rows 2 and 3 demonstrate the robustness of the findings to different measures of socioeconomic development. Row 2 in Table 3 presents the coefficients for models replacing the measure of occupational diversification used in Table 2 with a measure using linear interpolation to fill in missing years. Row 3 presents the coefficients for models replacing the measure of occupational diversification with a measure of (logged) gross domestic product per capita using data from the World Bank. Though these coefficients differ from those in row 1, the fact each is in the same direction as the respective models in row 1 confirms the findings in Table 2. Using the original measure of occupational diversification, row 4 presents the partial regression coefficients from models interacting occupational diversification with an indicator measuring advanced industrial democracies (taken from Golder [2005]) to demonstrate that the findings suggesting socioeconomic development leads to higher levels of party system fragmentation are not limited to Western democracies.

Rows 5-7 demonstrate the robustness of the findings to the use of different measures of electoral system permissiveness. Row 5 substitutes district magnitude with the seat product measures suggested by Shugart and Taagepera (2017). Row 6 uses the measure of district magnitude suggested by Gallagher and Mitchell (2005, 15-17) for mixed-member proportional systems, while row 7 presents the partial effects of occupational diversification from models interacting occupational diversification with district magnitude. To further substantiate the conclusions drawn in footnote 13 in the main text, row 8 restricts the analysis to single-member districts (and controls for regional differences) to reinforce the conclusion

that occupational diversification leads to higher levels of party system fragmentation even in single-member districts. Though the coefficient in model 3 in row 8 suggests the estimated impact of socioeconomic development in single-member districts is considerably weaker than that estimated when including all legislative elections, the fact remains that—like the other coefficients in rows 5-8, which are much closer in size to those in row 1—this coefficient mirrors the relationship seen in row 1.

Row 9 uses alternative measures of ethnic and religious diversity (see Fearon 2003; Fearon and Laitin 2003), while row 10 replaces the measure of non-democracies with the Polity measure of democracy. Row 11 replicates models 1-4 from Table 2 using panel-corrected standard errors. By and large, the coefficients in rows 9-11 differ little from those in row 1.

Table 3: Multilevel Linear Regression Estimates of Legislative Party System Fragmentation Using Alternate Model Specifications

Alternate Model Specifications	Dependent Variable			
	ENEP (National) Model 1	ENPP Model 2	ENEP (District) Model 3	% Largest Party Model 4
1. Original Coefficients (models 1-4 in Table 2)	2.17 (0.46)**	1.77 (0.35)**	3.62 (0.34)**	-20.03 (4.09)**
2. Development Using Linear Interpolation	1.30 (0.47)*	1.20 (0.40)**	2.40 (0.35)**	-20.94 (5.57)**
3. Logged GDP per capita	0.44 (0.11)**	0.36 (0.08)**	0.66 (0.09)**	-3.64 (0.82)**
4. Original Measure, Non-Western Countries	1.92 (0.60)**	1.91 (0.45)**	4.75 (0.49)**	-25.95 (5.09)**
5. Using Seat Product Measures	2.14 (0.45)**	1.86 (0.35)**	3.41 (0.34)**	-19.36 (3.92)**
6. Gallagher and Mitchell Measure of Magnitude	2.21 (0.47)**	1.86 (0.36)**	3.62 (0.34)**	-19.93 (4.02)**
7. Including Interactions with District Magnitude	1.85 (0.48)**	1.54 (0.37)**	3.24 (0.36)**	-18.31 (4.31)**
8. Restricted to Single-Member Districts	1.90 (0.69)*	1.57 (0.58)*	1.60 (0.51)**	-19.17 (7.34)*
9. Alternative Measures of Ethnic/Religious Diversity	2.28 (0.48)**	1.94 (0.38)**	3.78 (0.36)**	-22.14 (4.35)**
10. Using Polity Measure of Democracy	2.29 (0.49)**	2.07 (0.38)**	3.68 (0.36)**	-20.57 (4.29)**
11. Using Panel-Corrected Standard Errors	2.52 (0.35)**	2.00 (0.36)**	2.77 (0.37)**	-15.18 (4.07)**

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.005$, two-tailed tests. Entries are multilevel linear regression coefficients (standard errors) for the variable measuring occupational diversification. Control variables omitted in the interest of space.

Notes

I would like to thank the editors and reviewers for their many insightful comments. Incorporating this feedback has greatly improved the quality of this article. All responsibility for any errors, however, remains mine.

¹ These four cleavages are hardly exhaustive of the list of cleavages discussed in previous research (see, *e.g.*, Enyedi 2008; Deegan-Krause 2013; Stoll 2013). That said, we focus on these four because they remain the only cleavages universally agreed upon by all social cleavage theorists. Should we find that socioeconomic development can be added to the list of variables impacting party system fragmentation cross-nationally, this would reinforce those calls for other cleavages to be added to cross-national models in future research.

² With these concerns in mind, robustness tests reported in the Appendix show the estimated effects of socioeconomic development on party system fragmentation in non-Western countries mirror those in Western countries, suggesting that the arguments developed here apply equally well in developing countries despite differences in industrialization of employment—as well as the volatility and under-institutionalization of party systems noted above. Additional tests found no differences in the effects of socioeconomic development on party system fragmentation between African and non-African countries.

³ Following Clark and Golder (2006), we drop: all non-competitive elections; all elections using a fused vote (where presidential and legislative elections are determined by the same ballot); all elections using majoritarian upper tiers; and all elections in which the residual “other party” category used to calculate ENEP exceeds 15 percent.

⁴ Because these variables are measured only once per decade (every year ending in eight), we fill in missing values for the ten years preceding the date for which data are available. For instance, with data available for 1978, all years between 1978 and 1987 have the same value as that measured in 1978. We use this approach rather than using linear interpolation because

the former approach minimizes attrition of observations. Additionally, we prefer this measure over other measures of socioeconomic development like per capita gross domestic product because occupational diversification measures the key processes producing class and urban-rural cleavages more directly. Using these alternative measures of socioeconomic development produces results equivalent to the results presented here (see the discussion in the Appendix).

⁵ Although this measure does not allow us to observe the formation of urban-rural and class cleavages directly, it does allow us to test the argument indirectly: as socioeconomic development (*i.e.*, urbanization and non-agricultural employment) increases, we would expect urban-rural and class cleavages to form, which in turn would result in parties representing these cleavages—and leading to higher levels of party system fragmentation. Finding a positive association between socioeconomic development and party system fragmentation would provide evidence that the segmentation of the electorate accompanying socioeconomic development produces more fragmented party systems, as predicted by social cleavage theory—and that this relationship is robust to the alternative explanations accounted for with the control variables included in the model.

⁶ While most previous research has operationalized the permissiveness of electoral systems using district magnitude, some research contends that the permissiveness of the electoral system is best measured using a combination of mean district magnitude and the number of seats in the legislature. The results using the formulas recommended by Shugart and Taagepera (2017) in place of district magnitude confirm the results in Table 2 (see Table 3 in the Appendix).

⁷ Recognizing diversity in the measurement of district magnitude, we examined two measures of mean district magnitude. Following the practice of some research (*e.g.*, Amorim Neto and Cox 1997; Clark and Golder 2006), we measure mean district magnitude in the lowest tier of

countries' electoral systems. However, because others have argued that this measure should also account for district magnitude in the upper tiers of countries using mixed-member proportional electoral systems (Gallagher and Mitchell 2005: 15-17), we also estimated each model using a measure of district magnitude that used the number of seats available in the upper tiers of mixed-member proportional systems electing most seats in the upper tier. The estimates using each measure (see the Appendix) are substantively equivalent.

⁸ Because most previous research has included interactions between district magnitude and social cleavage diversity (Ordeshook and Shvetsova 1994; Amorim Neto and Cox 1997; Clark and Golder 2006), we also explored whether district magnitude conditions the effects of occupational diversification (see the results in the Appendix). The fact that the partial effects of occupational diversification remain associated with greater levels of party system fragmentation suggests that socioeconomic development leads to higher levels of party system fragmentation in all types of electoral systems, even in single-member districts—as a growing body of research suggests (Moser and Scheiner 2012; Ferree et al. 2017; Milazzo et al. 2018).

⁹ While most previous research has also included a measure of the time elapsed between presidential and legislative elections, other research notes problems with the comparability of the results between presidential and parliamentary systems when using this measure (Elgie et al. 2014). Recognizing these problems, we omit this measure from the analysis.

¹⁰ This transformation uses the following formula: effective number of ethnic/religious groups = $1/(1 - \text{fractionalization})$. To determine whether the results were robust to the use of alternative measures of ethnic and religious diversity, we also estimated models using the measures of ethnic and religious diversity taken from Fearon (2003; Fearon and Laitin 2003). The results of these robustness tests (see the Appendix) confirm the findings presented here.

¹¹ To demonstrate that the results are not due to the choice of (non-) democracy measure, we

also estimated models using Polity IV scores (Marshall and Jaggers 2017) instead. The results using this alternative measure (see the Appendix) confirm those in Table 2.

¹² Results using panel-corrected standard errors (see the Appendix) produce estimates that are substantively equivalent to those presented here—and often even more supportive of the social cleavage argument.

¹³ This conclusion is reinforced by models restricting the analysis to single-member districts, which corroborate previous research showing that social diversity may result in party system fragmentation in single-member districts exceeding two-party expectations associated with Duverger’s Law (Moser and Scheiner 2012; Ferree et al. 2017; Milazzo et al. 2018).