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Damir Kapidžić^a

^a Faculty of Political Science, University of Sarajevo, Skenderija 72, 71000 Sarajevo, Bosnia and Herzegovina

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Ethnic practice in electoral politics: Bosnia and Herzegovina's 1990 Presidency elections

Damir Kapidžić*

Faculty of Political Science, University of Sarajevo, Skenderija 72, 71000 Sarajevo, Bosnia and Herzegovina

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Democracy and democratic change do not come easy in plural societies and elections can be seen both as a potential hazard and a solution. This paper addresses the question whether electoral system designs with incentives for interethnic voting are able to support cross-ethnic and non-ethnic politics in plural societies. Focusing on the 1990 elections in Bosnia and Herzegovina, and based on newly available election data, the analysis looks at the electoral system for the seven-member Presidency. By quantitatively correlating measures of ethnic structure to election results on the municipal level, it is possible to find that cross-ethnic and non-ethnic voting in BiH was associated with high ethnic fractionalization, while high ethnic polarization had opposite effects. The interaction of electoral design and ethnic structure had a noticeable effect on the success of incentives for interethnic voting.

Keywords: electoral systems; plural societies; interethnic voting; ethnic fractionalization; ethnic polarization; Bosnia and Herzegovina

1. Introduction

Designing electoral systems for plural societies undergoing democratic transition is a daunting task. As electoral systems are inevitably tied to the political and economic context, they represent one of the most powerful tools available to influence the outcome of intergroup competition (Sartori, in Reilly 2001), especially during transitional periods. A commonly accepted notion is the necessity to avoid group marginalization and exaggeration of intergroup competition during elections that can lead to violence, but there is no consensus on which electoral system creates the most favourable outcomes. The paper addresses the question whether electoral systems with incentives for interethnic voting are able to support cross-ethnic and non-ethnic politics in plural societies. Shifting the focus towards ethnic composition, as a structural condition, and its effects on the ethnic practice of voting creates the opportunity to shed new light on the debate about electoral systems' design for plural societies. The empirical analysis looks into the effects of ethnic voting (EV) patterns during the transitional 1990 Presidency elections in Bosnia and Herzegovina (BiH).

Bosnia and Herzegovina during 1990 is a case where transitional politics, founding elections and a redefinition of ethnic political allegiance coincided, and

*Email: kapidzic@fpn.unsa.ba

where the political rules of the game were essentially up for grabs. With three competing and politically relevant ethnic groups, the democratic opening in BiH created an opportunity for them to challenge the incumbent elites that had single-handedly ruled for more than four decades, and to redefine the political and economic structure of the state itself. This kind of environment presents a least likely case and the ultimate challenge for electoral designs to foster cross-ethnic voting and moderate ethnic politics. The paper focuses on the electoral system for the seven-member BiH Presidency which combines elements of the plurality block vote and the majoritarian alternative vote (AV); its specific design intended to foster interethnic accommodation with strong incentives to reach out towards other ethnic groups. The overall level of cross-ethnic voting and more specifically, the level of cross-ethnic voting for candidates from non-ethnic parties, serves as an indicator as to whether the incentives built into the electoral design had the desired effects. The quantitative case study of the Presidency elections in BiH is based on newly available election data that is disaggregated to the municipal level with 109 units of analysis. By combining the electoral data with census data that was collected almost simultaneously (in March 1991), it is possible to define units of analysis with high diversity in population size, territory and ethnic distribution.

Quantitatively correlating election results with the ethnic distribution of the population, I find considerable instances of cross-ethnic voting, as well as cross-ethnic non-ethnic voting (CE-NEV), but with very large variations amongst municipalities. Accordingly, electoral design seems to have a strong impact under certain circumstances, but little effect under others. In order to explain these circumstances, building on a constructivist understanding of ethnicity and ethnic practice, I use measures of ethnic heterogeneity, ethnic fractionalization and ethnic polarization to measure cross-ethnic voting in different municipal settings. By correlating these measures of ethnic structure with instances of cross-ethnic voting, conceived as ethnic practice, it becomes clear that the interplay of electoral design and ethnicity is essential in order to foster cross-ethnic voting. Especially high levels of ethnic fractionalization can be linked to an increase in interethnic voting and voting for candidates from non-ethnic parties.

In the following sections, I shall introduce the interaction between electoral system design in plural societies and ethnic structure as a context variable that influences voting practices. Thereafter, I shall present the electoral design for the BiH Presidency elections in 1990, measures for the ethnic structure of BiH and a detailed analysis of cross-ethnic voting patterns. I conclude with a discussion of the findings.

2. Electoral systems for plural societies

Democracy in plural or divided societies is hard to attain, difficult to maintain and easy to unravel. So goes the common understanding of empirical democratic theory when dealing with societies that are heterogeneous, whether ethnically, linguistically or in some other form. The prognosis for the survival of such democratic regimes ranges from unattainable (Rabushka and Shepsle 1972) to difficult (Dahl 1989; Horowitz 1985; Lijphart 1977, 2004).¹ There is a general consensus that these regimes cannot be treated in the same way as democracies in homogeneous societies. Instead, they require a set of specifically designed institutions in order to survive. Along with territorial arrangements (federalism and autonomy) and executive power sharing, most research has focused on electoral systems. It is still

important to acknowledge that all are integral and complementary parts of a political system, where they constantly interact and influence each other. Different electoral systems produce different results and it is necessary to ask, ‘what one wants the electoral system to do’ (Horowitz 2003, 115). Arguably, the main task of electoral systems in plural societies is to take the heat out of ethnic politics and help manage democracy. Two distinct proposals for electoral systems in plural societies feature prominently in academic debates, each of which emphasizes a different approach to democracy based on the competing values of competition and representation. While the proponents of consociationalism insist on proportional representation (PR), advocates of centripetalism favour majoritarian electoral systems, specifically the AV.²

Consociationalists (Lijphart 1977, 1999, 2004; Norris 2008; amongst others), generally, advocate an approach where distinct ethnic groups form the core of the democratic system and guarantees for representation of all relevant groups are enshrined in the electoral system. PR is thereby considered the only electoral formula suitable for divided societies. Along with a set of other measures intended to ensure equal group representation and inclusion, it most accurately depicts the divisions within society and transfers them to the political scene. International support for PR in divided societies is nearly universal and it has been proposed and adopted in most cases of internationally assisted institutional design in recent years (for example in BiH 1995, East Timor 2001, Iraq 2005, and Kosovo 2007).

Advocates of centripetalism, on the other hand, (Horowitz 1985, 1991, 2003; Reilly 2001; Sisk 1996; amongst others) favour an integrative approach with incentives for non-ethnic electoral competition. They emphasize ‘the importance of institutions that can encourage cooperation, accommodation and integration across ethnic divides, and can thus work to break down the salience of ethnicity rather than fostering its representation institutionally’ (Reilly 2011, 263). This is achieved through electoral incentives that encourage pooling votes from multiple ethnic groups, where successful candidates have to ensure support from ethnic groups other than their own to win elections. The AV, a majoritarian formula where a single candidate is elected in a multi-ethnic district, is advocated as the most appropriate electoral formula. Centripetalists argue that PR is not the best solution for multi-ethnic societies as it rigidifies divisions by institutionalizing ethnicity, thus replicating existing divisions in representative institutions. Under PR, ethnic representatives are not rewarded for reaching out to other groups, but solely for catering to their co-ethnic followers. There are very few cases of AV and most are located in the south Pacific. In Fiji, where the ethnic divide is strongly bipolar between indigenous Fijians and Indian settlers, Fraenkel and Grofman (2004, 2006) found that AV did not produce any moderation in electoral outcomes. Even though the authors admit that the Fijian electoral system under AV had serious flaws, the outcomes produced by PR under the same circumstances would have hypothetically been more moderate (Fraenkel and Grofman 2006, 648). Papua New Guinea is a very different case, as one of the world’s ethnically most heterogeneous societies with a very high number of small ethnic groups where no single one is dominant. Reilly (1997, 2001) found that AV produced more moderate results there than the first past the post system.

The argument over the appropriate electoral system for plural or divided societies has been one of the most contentious issues in the debate between proponents of consociationalism and centripetalism. In that sense, it is puzzling how few

empirical studies have been published that look into the effects of electoral systems that, like AV, provide strong incentives to increase cross-ethnic voting. In this paper, I shall introduce a new case that, to the best of my knowledge, has so far not been analyzed in the academic literature and rarely mentioned the 1990 Presidency elections in Bosnia and Herzegovina. These elections were not held under AV, but rather, under a plurality block vote with ethnic candidate lists. However, they included very strong incentives for cross-ethnic voting along with a multi-ethnic electoral unit and common ballot. These elections will broaden the limited range of published cases of cross-ethnic electoral incentives and for the first time include an East European country. At the same time, it will be possible to analyze the introduction of cross-ethnic electoral incentives within a context marked by democratic transition from a communist political system.

3. Ethnic identity and ethnic practice

Most scholars agree that ethnicity is important for party politics and political contest, but they employ a radically different understanding of ethnic identity and its influence on elections. In rejecting essentialist, singular and fixed understandings of ethnicity, I adopt a constructivist view of ethnic identity as ‘a subset of categories in which descent-based attributes are necessary for membership’ (Chandra 2012, 9). These can include identity categories based on ‘race, region, religion, sect, language family, language, dialect, caste, clan, tribe or nationality’ (Chandra 2012, 9; also see Fearon 2008). Chandra makes a distinction between nominal ethnic identities, where an ‘individual’s descent-based attributes makes her eligible for membership’ and activated ethnic identities, where individuals assert membership or are assigned membership by others. Everybody has ‘a repertoire of nominal ethnic identities from which one or more may be activated’ (Chandra 2012, 9). Accordingly, *ethnic practice* refers to ‘any concept related to the attributes and ethnic identity categories activated by individuals and populations in different contexts’ (Chandra 2012, 11). As ethnic practice is context specific, different sets of ethnic identity categories can be activated in different contexts, resulting in divergent outcomes when, for example, looking at non-electoral politics within the workplace or at voting behaviour under political transition (Chandra 2012, 12). While Chandra bases *ethnic structure* on nominal ethnic identities, I shall use this term to describe what Zuber (2013) refers to as *ethnic identification*, a category of group recognition and self-identification based on (nominal and/or activated) ethnic attributes that characterize individuals or whole populations of a given country. In this sense, census data serve as a useful, albeit imperfect, source of information on ethnic structure,³ while data on ethnic practice is captured by electoral results on EV.

In line with a constructivist view, ethnic identity does not predetermine party formation and electoral outcome, but rather indirectly informs political choice through a set of ethnic categories. Birnir argues that in times of transition, when many social categories are being renegotiated, ethnic identity serves as a reliable source of information for political choice provided by ‘ethnic attractors’ in times of uncertainty (Birnir 2007, 20, 36). Serving both as an information source and filter, ethnicity influences voters to believe that an ethnic party representing their own ethnic group will best protect their interests. It is therefore plausible to assume that in multi-ethnic environments undergoing political transition, members of an ethnic group will primarily cast a vote for ‘their’ ethnic candidates and ethnic parties in

competitive elections. Taking this into account, I make two assumptions that I apply to the context of the 1990 BiH Presidency elections: (A1) members of an ethnic group will cast two (both) votes for candidates from their ethnic group, regardless of whether they cast all or any votes for candidates of other ethnicity; and (A2) members of an ethnic group will primarily cast both votes for candidates from ethnic parties that represent their own group, regardless of whether they vote for candidates from other ethnic groups.⁴ Addressing the problem of ecological inference, these assumptions are made at the least aggregated level for which electoral data is available. The first assumption will make it possible to test for cross-ethnic voting, while the second will be used to measure cross-ethnic voting for non-ethnic candidates.

4. The electoral system for the 1990 BiH Presidency elections

At the time of the 1990 elections, Bosnia and Herzegovina was a socialist republic under one-party rule of the League of Communists, and a member state of the Socialist Federal Republic of Yugoslavia. BiH was the most diverse of Yugoslavia's republics with three dominant ethno-religious groups (Muslim Bosniaks,⁵ Orthodox Serbs and Catholic Croats) that constituted over 90% of the population. Yugoslavs constituted a sizable minority, while each of the other ethnic or religious groups was below 0.05% (Table 1; Institute for Statistics of the Federation of Bosnia and Herzegovina *n.d.*). As data from three previous censuses indicates similar patterns of group distribution, it is possible to conclude that ethnicity, as a framework for political self-identification, was consistent through more than a generation before the elections. At the same time, ethnic groups were dispersed across most of the state, with only a small number of ethnically homogeneous municipalities.⁶

The multi-member Presidency of Bosnia and Herzegovina was the highest executive body in the Republic. It consisted of seven members, two from each major ethnic group, and one representing both ethnic and non-ethnic 'Others', thereby mirroring the different segments of society. Members were elected by direct vote with all candidates listed on a single ballot and grouped into four lists according to ethnicity ('Muslims', 'Serbs', 'Croats' and 'Others'). The whole of BiH was a single electoral district where candidates, ballot structure and legal framework were the same, and voters throughout the country received identical ballots, irrespective of their own ethnicity. All voters could vote for as many as two candidates of each ethnic group and for one on the 'Other' list, a total of seven votes, whereby the votes were equally weighed and voters' ethnicity was not recorded. Casting

Table 1. Ethnic composition of BiH (1991 population census).

Ethnic group	Population size	Percentage
Muslims (Bosniaks)	1,902,956	43.48
Serbs	1,366,104	31.21
Croats	760,852	17.38
Yugoslav	242,682	5.55
Other	104,439	2.38
Total	4,377,033	100

Notes: Institute for Statistics of the Federation of Bosnia and Herzegovina, Sarajevo (*n.d.*).

An ethnic breakdown of municipalities (1991 census) is included as an appendix to this paper.

multiple votes was not mandatory and voters could opt to choose one candidate or seven, as long as their votes were properly distributed according to available seats. Members of the Presidency were elected by a plurality of votes within their respective ethnic lists (Arnautović 2009, 539–541). Votes were counted at municipal level and further aggregated at the level of seven electoral regions.

The voting system for the BiH Presidency in 1990 is unique and difficult to classify. It is essentially majoritarian and can be described as block voting (plurality at large) with non-exclusive ethnic lists (in short BV-EL). According to the best of my knowledge, no similar type of electoral system has been used in free elections for executive positions. It shares many similarities with both AV and the block-voting system used for parliamentary elections in Lebanon, combining elements of the two systems. With Lebanese block voting, it shares ethnic lists, plurality vote and multiple votes that correspond to the available number of ethnically defined seats. Similarities with AV are based on the powerful incentive for cross-ethnic voting that encourage voting across ethnic lines while not affecting the primary vote for candidates of the voters' own ethnicity. This creates strong pressure on political parties and candidates to appeal to cross-ethnic voters, as their choice can be decisive to electoral outcome (see also Kapidžić 2013). At the same time, BV-EL displays the 'landslide' dynamics observed under regular block voting, but within the individual ethnic lists.

The system of a multi-member collective Presidency draws on institutional legacy of the socialist 1974 BiH constitution. Under the previous system, the individual members represented the different ethnic groups, but there was no public contestation on any relevant matter amongst office-holders, as all were members of the League of Communists. With the introduction of electoral rules, the collective Presidency was adapted and refined for the founding elections. The BV-EL electoral system was supposed to promote non-ethnic politics with strong electoral incentives for cross-ethnic voting. These were expected to favour the 'moderate' ethnic candidates of the incumbent and non-ethnic BiH League of Communists (SKBiH), providing them with an advantage over particularistic ethnic parties. At the same time, it was expected to mitigate ethno-nationalist politics through a system of reserved seats and separate ethnic lists, but also introduced elements of communalism into political contestation and campaigning.

I shall briefly list the main political parties running for the 1990 elections, but point to a more-detailed analysis elsewhere (Kapidžić 2013). The parties can be divided into three basic categories: non-ethnic regime parties, non-ethnic opposition parties and ethnic opposition parties (Carothers 1999; Chandra 2011; Horowitz 1985). According to these characteristics, the BiH parties in 1990 can be classified as 'ex-communist', 'ethno-nationalist' or 'liberal-reformist' (Table 2).

Of the 42 parties and groups that registered for the elections (Arnautović 2009), only seven registered candidates for the Presidency elections.⁷ The 'ex-communist' regime parties include the former League of Communists (*Savez komunista - Stranka demokratskih promjena, SK-SDP*) and a party formed out of the socialist youth organization, the League of Socialist Youth that for decades served as a stepping-stone towards SKBiH membership (*Savez socijalističke omladine - Demokratski savez, SSO-DS*). The three main 'ethno-nationalist' opposition parties each catered individual ethnic interests. These were the predominantly Bosniak Party of Democratic Action (*Stranka demokratske akcije, SDA*), the Serbian Democratic Party (*Srpska demokratska stranka, SDS*) and the Croatian Democratic

Table 2. Characteristics of political parties for the 1990 elections in BiH.

	Ethnic	Non-ethnic
Regime	–	[ex-communist] SK-SDP SSO-DS
Opposition	[ethno-nationalist] SDA SDS HDZBIH MBO	[liberal-reformist] SRSJ

Union of BiH (*Hrvatska demokratska zajednica BiH*, *HDZ BiH*), while the Muslim Bosniak Organization (*Muslimanska bošnjačka organizacija*, *MBO*) was only marginally relevant. These ethno-nationalist parties were not mutually antagonistic during the electoral campaign, but rather shared a joint resolve to oust the ruling SK-SDP (Andjelic 2003; Bieber 2006, 20; Burg 1997, 127–130). Finally, the ‘liberal-reformist’ Union of Reform Forces of Yugoslavia (*Savez reformskih snaga Jugoslavije*, *SRSJ*) ran on a liberal-democratic platform, bringing together reform-oriented communist party officials and civic opposition members. It was unable to position itself as a distinct alternative, either because of a lack of time or because of a perceived artificial nature and lack of a strong party base.⁸ For statistical analysis, I shall group the two non-ethnic categories together, as both presented an alternative to ethnic political options.

The Presidency elections were held on 18 November 1990, with a high average turnout of over 78% and resulted in a complete victory of the three main ethno-nationalist parties. The SDA, SDS and HDZ each won two mandates for ‘their’ ethnic group, while the SDA won an additional mandate of the ‘Others’. Detailed election results are included as an appendix to this paper (Appendices 1–3).⁹

5. Data and statistical analysis

The paper employs a single-case cross-sectional analysis combining existing with newly available data.¹⁰ The data distinguishes between 109 distinct units of analysis – the individual BiH municipalities – for both election and census results. No selection of units was performed, as all municipalities were included. The data-set was compiled from new data available through ZIPO and existing data from the Institute for Statistics of the Federation BiH.¹¹ Variables drawn directly from the data include total population and population by ethnic group, number of valid ballots, number of votes for each candidate (and information on candidates’ ethnicity and party affiliation).¹² The data are highly disaggregated at the municipal level for each candidate/ethnic group. This makes it possible to analyze ethnic practice, defined as cross-ethnic and CE-NEV behaviour, in order to assess the effects of the BV-EL electoral system in transcending ethnic politics under least likely conditions.

It is important to stress that the analysis of the BV-EL electoral system requires a unique approach as voters had multiple votes and could vote for one candidate or up to seven candidates, the ballot being valid in both cases. Foremost, it is necessary to calculate to what extent casting multiple votes was utilized, with the average number of votes cast ranging on a scale of one to seven. Dividing the sum of

votes for all candidates by the number of valid ballots gives us the average number of votes cast per ballot; throughout BiH voters voted for an average of 4.34 candidates.¹³ With no more than two votes going to candidates of their own ethnic group, the BV-EL system resulted in a large overall degree of cross-ethnic voting. Still, the overall percentage of cross-ethnic voting is difficult to determine as candidates from ethnic parties were included on the 'Others' list, skewing the value for the cross-ethnic vote. The 'Others' list will be omitted in the subsequent analysis, as the two aforementioned assumptions will not work with this list that includes numerous ethnic groups and non-ethnic Yugoslavs. While certain limitations might arise from this decision, they are considered minor due to the small percentage of 'Others' in the population and also because the 'Others' list was successfully co-opted by nationalist parties.

Further, a series of variables for ethnic practice are constructed and calculated for each municipality: (1) cross-ethnic votes, (2) cross-ethnic votes for candidates from ethnic parties and (3) cross-ethnic votes for candidates from non-ethnic parties. I shall present each variable in brief: (1) The cross-ethnic votes variable (CE) measures the percentage of votes that all candidates from an ethnic list attained through cross-ethnic voting. Under the first assumption (A1), it is calculated separately for each ethnic list.¹⁴ (2) The variable for cross-ethnic, ethnic voting (CE-EV) measures the percentage of votes that candidates from ethnic parties received through cross-ethnic voting. Under the second assumption (A2),¹⁵ it is calculated for each of the three ethnic groups separately and as a combined value.¹⁶ (3) The variable for cross-ethnic, non-ethnic voting (CE-NEV) measures the percentage of cross-ethnic support for candidates from non-ethnic parties. Also under the second assumption (A2) and under the first assumption (A1), it is calculated for each of the three ethnic groups separately and as a combined value.¹⁷ All variables are calculated at municipality level for the 109 units of analysis and are included as an appendix to this paper, while I explain the calculations in more detail through the case of Bosanski Brod municipality and the Croat ethnic list of candidates (see endnote).¹⁸

The cross-ethnic vote is an essential and integral part of interethnic electoral incentives, but voters have to take a deliberate decision to make use of it. Whether this happened in BiH is shown through the overall level of cross-ethnic voting (Table 3). The average country value for the CE variable is 0.263 with similar averages for all ethnic lists, meaning that over a quarter of the votes for the Presidency was gained through cross-ethnic voting.¹⁹ This is a considerable percentage, although not large enough to decisively influence electoral outcome. However, there are large differences in CE values between municipalities ranging from a maximum of 0.953 to a negative of -0.049, resulting in large standard deviation for all ethnic lists.

Table 3. Variable values for cross-ethnic voting.

Values for municipalities	CE (all lists)	CE (Bosniak list)	CE (Serb list)	CE (Croat list)
Minimum value	0.046	-0.005*	-0.049*	-0.027*
Maximum value	0.585	0.953	0.818	0.589
Average	0.267	0.295	0.238	0.257
St. deviation	-	0.204	0.164	0.133

Note: Values rounded off to three decimals.

*See note 14 for explanation of negative values.

The CE-NEV/CE-EV variables are central to testing the hypothesis on the ability of BV-EL to support non-ethnic politics and assessing whether cross-ethnic voting benefited candidates from non-ethnic (CE-NEV) or ethnic parties (CE-EV) (Table 4). The general average values for CE-NEV (0.218) and CE-EV (0.045) show a strong preference of cross-ethnic voting in favour of candidates from non-ethnic parties. Patterns of cross-ethnic support from individual ethnic groups indicate a relatively low preference for Croat and Serb ethnic candidates (Croat CE-EV: 0.029, Serb CE-EV: 0.009), and a somewhat higher preference for Bosniak ethnic candidates (Bosniak CE-EV: 0.098). A very high standard deviation (0.211) and maximum CE-EV value for Bosniak candidates (0.940) point to localized cross-ethnic support in certain municipalities, while CE-EV support for Croat and Serb candidates remained constantly low across the board. On the other hand, CE-NEV values are for the most part comparable for all ethnic groups, but with considerable difference in support ranging from 0.000 to 0.795.

Two preliminary conclusions related to the BV-EL electoral system are warranted. Foremost, the incentives for cross-ethnic voting were used but not to the extent that was envisaged, with over a quarter of the Presidency votes coming from cross-ethnic voting. Second, voting patterns indicate that candidates from non-ethnic parties mostly benefited from the cross-ethnic vote. These results are, nevertheless, inconclusive due to large differences in cross-ethnic voting amongst municipalities. In order to explain them, one needs to look further into structural variations amongst municipalities and ask what structural conditions, in terms of ethnic structure, promote or restrict cross-ethnic voting and what conditions strengthen support for non-ethnic political options? The characteristics of ethnic structure that can influence voting outcomes and institutional behaviour, specifically bipolar and multipolar ethnic divisions, will be introduced through variables of ethnic homogeneity, fractionalization and polarization.

6. Structural explanations: ethnic homogeneity, ethnic fractionalization, and ethnic polarization

Political stability is not influenced only by the presence of multiple ethnic groups, but also by the characteristics of ethnic divisions and their distribution. Ethnic homogeneity, as the simplest characteristic of ethnic structure, refers to the percentage of each (ethnic) group in municipal populations where they constitute the majority. In 83 out of 109 BiH municipalities in 1991, one ethnic group formed the absolute majority, but most municipalities also had large minority populations of one or more groups. Measures that put multiple ethnic groups and their size in relation to each other are ethnic fractionalization and ethnic polarization. A large number of studies utilize both fractionalization and polarization measures, mostly within the quantitative conflict resolution and the economic development literature (Esteban and Ray 2008; Montalvo and Reynal-Querol 2005a; amongst others), and this paper shall construct and employ both in an attempt to explain cross-ethnic voting in the 1990 BiH elections.²⁰

Ethnic fractionalization measures the diversity within a population by calculating the probability that two random individuals belong to the different groups, with a maximum value of 1.0 (Alesina et al. 2003; Fearon 2003). In situations where there are only four relevant groups, as in BiH, the maximum value is 0.75 (this

Table 4. Variable values for cross-ethnic support for candidates from ethnic and non-ethnic parties.

Values for municipalities	CE-EV (all c.)	CE-NEV (all c.)	CE-EV (Bosniak c.)	CE-NEV (Bosniak c.)	CE-EV (Serb c.)	CE-NEV (Serb c.)	CE-EV (Croat c.)	CE-NEV (Croat c.)
Minimum value	0.000	0.039	0.000	0.000	0.000	0.000	0.000	0.000
Maximum value	0.317	0.546	0.940	0.494	0.114	0.795	0.111	0.586
Average	0.045	0.218	0.098	0.197	0.009	0.230	0.029	0.228
St. deviation	–	–	0.211	0.115	0.021	0.156	0.029	0.122

Note: Values rounded off to three decimals.

value will be levelled to 1.0 when necessary, to allow comparison with the polarization value). The measure is defined as:

$$\text{FRAC} = 1 - \sum_{i=1}^N \pi_i^2 = \sum_{i=1}^N \pi_i(1 - \pi_i) \quad (1)$$

where N is the number of (ethnic) groups in a population and π is the proportion of people who belong to a specific (ethnic) group, given by their percentage within the population.

Ethnic polarization measures division within a population, capturing the likelihood that two people in a society are members of the two largest ethnic groups (Reynal-Querol 2002; Montalvo and Reynal-Querol 2005a, 2005b). The index value approaches the maximum of 1.0 in a situation with a small ethnic majority and a large ethnic minority, declining as the number of group's increases and their share of population decreases. It is defined as:

$$\text{POL} = 1 - \sum_{i=1}^N \left(\frac{1/2 - \pi_i}{1/2} \right)^2 \pi_i = 4 \sum_{i=1}^N \pi_i^2 (1 - \pi_i) \quad (2)$$

where N is the number of (ethnic) groups in a population and π is the proportion of people who belong to a specific (ethnic) group, given by their percentage within the population.

Measures of ethnic fractionalization and ethnic polarization are constructed for all 109 pre-war BiH municipalities using data from the 1991 census with four categories, one for each of the three main ethnic groups and one for other groups.²¹ The calculated values for ethnic fractionalization range from 0.02 to 0.71 (on a scale from 0.00 to 0.75), with a median value of 0.47 amongst municipalities and 0.68 for the entire BiH population. The values for ethnic polarization range from 0.04 to 0.97 (on a scale from 0.00 to 1.00), with a median value of 0.73 amongst municipalities and 0.81 for the entire BiH population. Both measures exhibit large differences in values between municipalities and a generally higher overall measure of ethnic polarization. Montalvo and Reynal-Querol (2005a, 317) demonstrated that measures of polarization and fractionalization have a 'positive and close relationship in homogenous countries', but that with high levels of heterogeneity the correlation 'is close to zero or even negative'. Homogeneous BiH municipalities are expected to show equal levels of cross-ethnic voting for the same levels of fractionalization and polarization, while highly heterogeneous municipalities are expected to show divergent results in cases of either high fractionalization or polarization.

Basic municipal-level conditions of ethnic structure, measured as ethnic homogeneity, do not have a similar influence on levels of cross-ethnic voting (CE) for all three ethnic groups in municipalities with an ethnic majority population (Figure 1). This holds even after excluding six outlier municipalities with large standard deviation in levels of CE for different ethnic groups.²² While an increase in ethnic homogeneity on municipal level does lead to an increase in votes for the ethnic list of the majority population, as well as an increase in votes for the 'Others' list in majority Bosniak and Serb municipalities (whose ethnic parties had candidates on this list), the percentage of cross-ethnic votes is not equally affected. Croat majority municipalities show a much higher level of cross-ethnic voting and a coefficient of determination, while the CE percentages and coefficient of determination remain

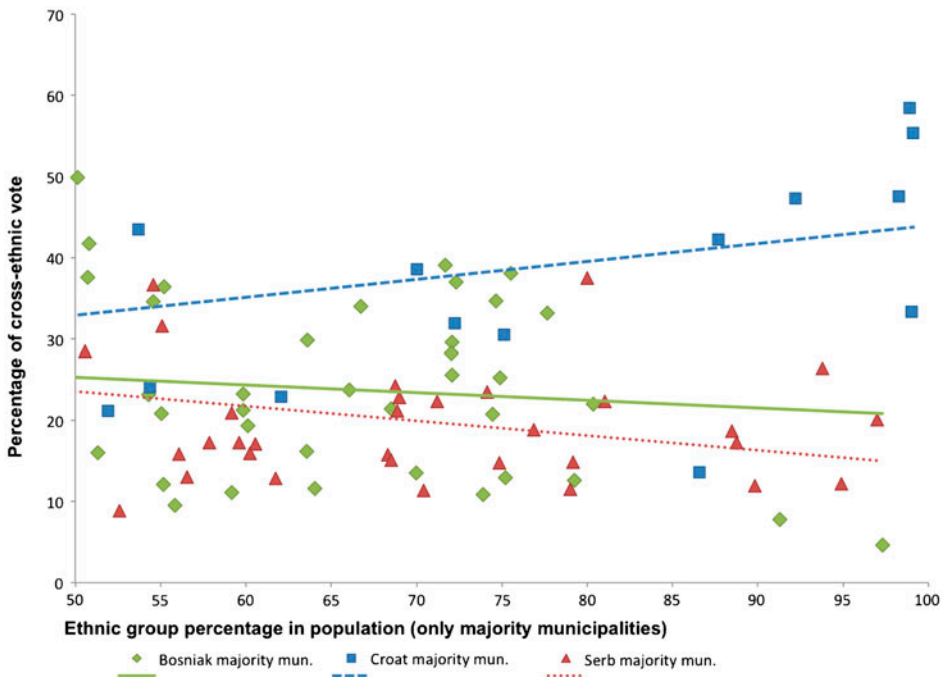


Figure 1. Cross-ethnic voting in ethnic majority municipalities.

Notes: Linear regression; croat majority mun.: $r^2 = 0.25505$; serb majority mun.: $r^2 = 0.17249$; bosniak majority mun.: $r^2 = 0.03811$.

low for municipalities with Bosniak or Serb majorities. It is possible to say that a measure of heterogeneity as ethnic structure does not explain cross-ethnic voting.

When using ethnic fractionalization and polarization measures as indicators of ethnic structure, it is possible to observe that both initially follow a similar trend with regard to cross-ethnic voting. However, average CE values diverge as fractionalization and polarization approach maximum values, indicating that high levels of fractionalization translate into higher cross-ethnic voting, while high levels of polarization reduce cross-ethnic voting. The results, visualized in Figure 2, level maximum possible values for ethnic fractionalization to 1.0 in order to make them comparable with ethnic polarization measures, and employ a third-level polynomial regression to capture the trend under high FRAC and POL values.

The population size of the individual municipalities does not influence cross-ethnic voting, although CE values increase slightly as the size of population rises. Cross-ethnic voting appears to be influenced differently by the distinct structures of ethnic divisions in plural societies. In ethnically homogeneous societies, the ethnicity of voters is likely to influence voting across ethnic lines, while the increase in homogeneity reinforces the initial trend. In extremely polarized societies, voters are least likely to cast cross-ethnic votes, even if this does not affect results for candidates from their own group. In highly fractionalized societies, on the other hand, voters are most likely to cast cross-ethnic votes with likelihood increasing greatly under high values of fractionalization.

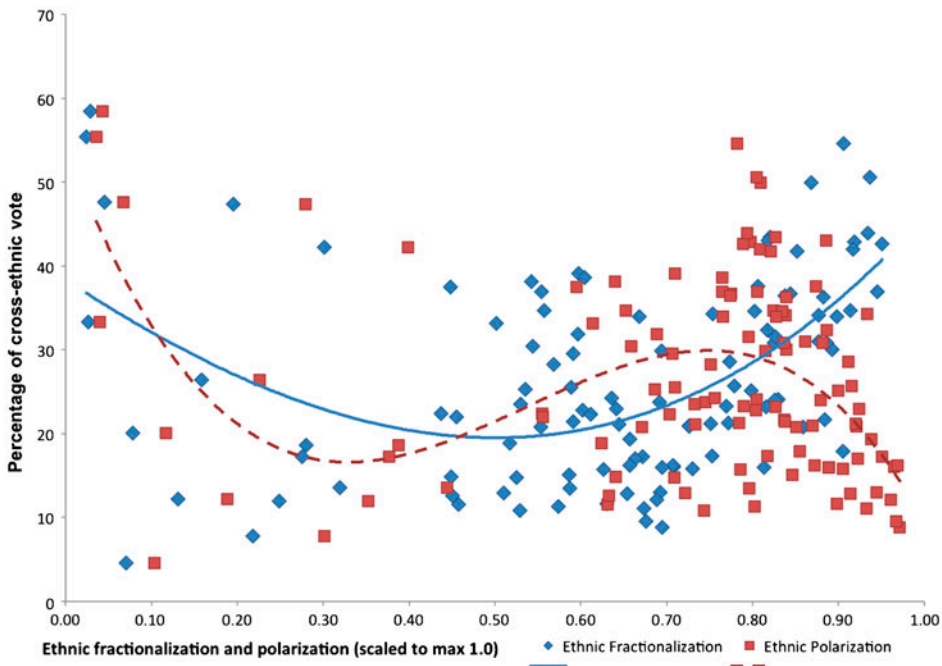


Figure 2. Cross-ethnic voting and ethnic fractionalization and polarization.
 Notes: Trend: third-order polynomial regression; FRAC: $R^2 = 0.2817$; POL: $R^2 = 0.22352$.

In addition to the levels of cross-ethnic voting, I look at whether certain forms of ethnic structure benefited non-ethnic political options by correlating CE-EV and CE-NEV with ethnic homogeneity, fractionalization, and polarization. First, it is possible to observe that ethnic homogeneity has a negligible effect on the CE-NEV value with no clear trend for majority municipalities of all ethnic groups alike (Figure 3). This shows that a lack of diversity does not influence cross-ethnic support for non-ethnic parties in any meaningful way. The CE-EV value, on the other hand, is generally very low in Bosniak and Serb majority municipalities, but shows a noticeable increase in municipalities with a Croat majority as they become more homogenous. This indicates generally limited cross-ethnic support in Bosniak and Serb majority municipalities, while also showing strong Croat cross-ethnic support for candidates from other groups' ethnic parties amongst an outlier group of Croat municipalities.

An increase in both ethnic fractionalization and polarization values corresponds to lower levels of support for ethnic political options, measured as CE-EV. This means that diversity, in whatever form, reduces chances for candidates from ethnic parties to gain cross-ethnic support. The results in Figure 4, again, level maximum values for ethnic fractionalization at 1.0 and employ a third-level polynomial regression to capture trends when FRAC and POL values are high. When looking at support for non-ethnic political options, fractionalization and polarization variables exhibit divergent trends. Under moderate levels, both variables exhibit an overall rise in support for non-ethnic political options. At a certain level of the polarization variable (approx. 0.75), the value for CE-NEV starts to drop

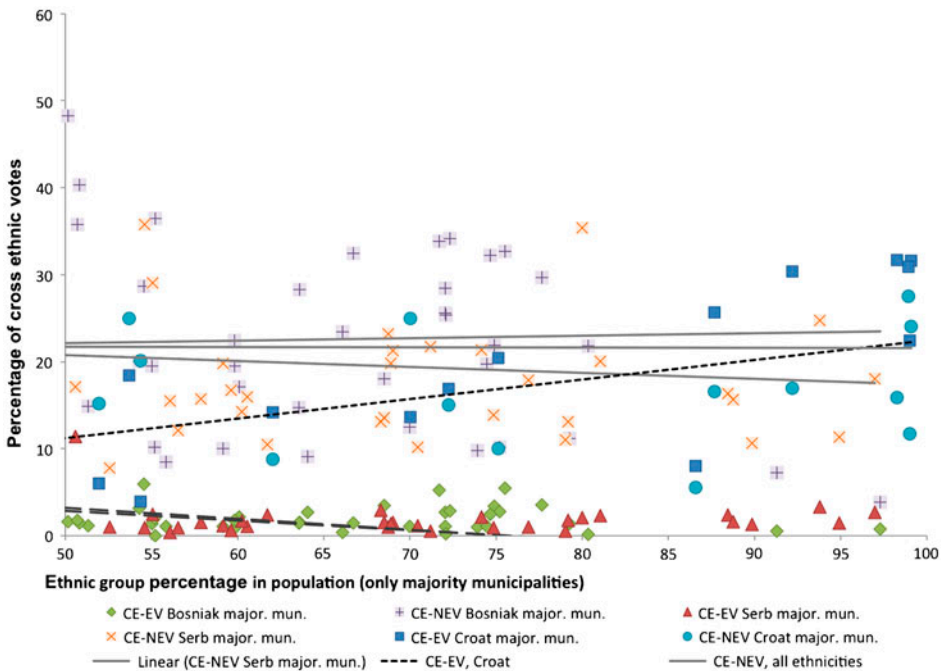


Figure 3. Cross-ethnic voting for ethnic and non-ethnic options in ethnic majority municipalities.

Notes: Trend: linear regression; CE-NEV-Bosniak: $r^2 = 0.00478$; CE-NEV-Croat: $r^2 = 0.00007$; CE-NEV-Serb: $r^2 = 0.03367$; CE-EV-Croat: $r^2 = 0.74358$; CE-EV-Bosniak: $r^2 = 0.18977$; CE-EV-Serb: $r^2 = 0.1827$.

considerably and continues to fall as polarization rises. In extremely polarized societies, the support for candidates from non-ethnic parties is minor. On the other hand, high levels of fractionalization (above the same 0.75 level when corrected to a 1.0 scale or 0.56 on a regular fractionalization measure) correspond with a strong increase in CE-NEV and continue to rise as fractionalization increases. Highly fractionalized municipalities exhibit the highest levels of cross-ethnic support for non-ethnic candidates.

7. Discussion and conclusions

Conventional reasoning is that the prospects for democratic stability decrease as the number of ethnic groups increases (Dahl 1989; Rabushka and Shepsle 1972), or that a small number of groups are optimal (Lijphart 1977, 56). Other scholars argue that prospects for democratic stability are high both in highly homogeneous and in highly heterogeneous societies (Horowitz 1985; Reilly 2001). According to Horowitz (1985), cross-ethnic support for non-ethnic parties and candidates should be strong when ethnic fractionalization is both low and high, but not so much in between. One crucial part of this proposition can be confirmed: cross-ethnic support for non-ethnic parties increases with levels of ethnic fractionalization. On the other hand, no strong support for non-ethnic options is found in weakly fractionalized

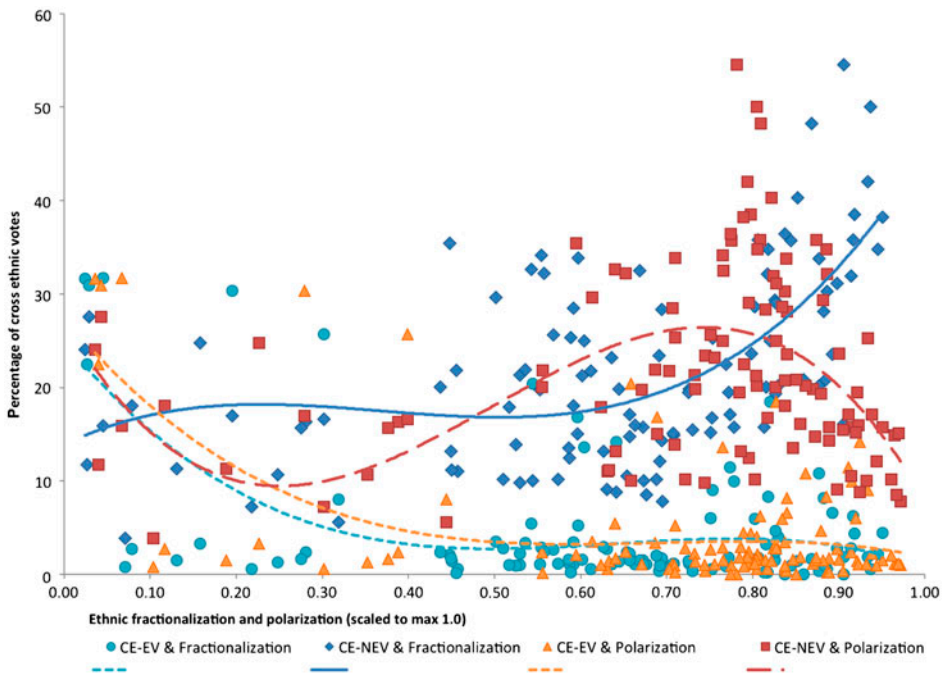


Figure 4. Cross-ethnic voting for ethnic and non-ethnic options and ethnic fractionalization and polarization.

Notes: Trend: third-order polynomial regression; CE-NEV-FRAC: $R^2 = 0.37083$; CE-NEV-POL: $R^2 = 0.23326$; CE-EV-POL: $R^2 = 0.35525$; CE-EV-FRAC: $R^2 = 0.34237$.

municipalities. Ethnic polarization is shown to exhibit varying trends in relation to both cross-ethnic and CE-NEV, with increases at low and medium levels of ethnic polarization, but a strong decline of CE and CE-NEV as polarization approaches maximum values. In highly polarized municipalities, voters are less likely to cast cross-ethnic votes and much less likely to vote for non-ethnic options. Consequentially, cases where electoral competition between two ethnic groups is fierce, accommodating incentives are not likely to foster cross-ethnic voting and other electoral systems may yield better results. The electoral incentives within the BV-EL system were successful in increasing cross-ethnic voting for non-ethnic options in strongly fractionalized municipalities, but less so in municipalities with polarized or homogeneous ethnic structure. These results are in line with earlier studies where Chandra (2005) found that high ethnic fractionalization in India produces effects that moderate ethnic competition in electoral politics, and Reilly (2001) came across the same effect in Papua New Guinea. The studies by Fraenkel and Grofman (2004, 2006) that showed very little support for cross-ethnic voting and non-ethnic options within the highly ethnically polarized Fijian society are also confirmed.

Existing research on the 1990 BiH elections draws a link between pre-election cooperation of ethno-nationalist parties and successful electoral outcomes and cross-ethnic support for nationalist candidates at the ballot box (see Andjelic 2003; Arnautović 2009; Bieber 2006, 22; Burg 1997, 130). The data from the Presidency elections challenges this assumption and concludes that cross-ethnic voting

benefited candidates from non-ethnic political options. While most existing research is based on statements by political leaders, media coverage and the 1990 election campaign, the conclusions presented here are based exclusively on election results and newly available electoral data as the only tangible outcome of any pre-electoral cooperation. I do not dispute the presence of pre-electoral cross-ethnic support amongst ethno-nationalist parties and their leaders, but point out that it did not translate into more cross-ethnic votes between ethno-nationalist parties. An unexpected finding is six outlier cases that show strong cross-ethnic support mainly for candidates from Bosniak ethnic parties.²³ These municipalities all share very similar characteristics: they were ethnically homogeneous with a Croat majority ranging from 99.10%, to 87.68%; a medium population size ranging from 16,000 to 28,000, and one small case with a population of 5000 people; and geographical proximity, being located in southwestern BiH, bordering Croatia. They demonstrated high CE values, from 0.875 to 0.513 for non-Croat candidates, and atypically large cross-ethnic voting for Bosniak candidates (0.953–0.689), largely benefiting ethnic candidates from the SDA party. Since other Croat municipalities with similar demographic characteristics did not exhibit such high CE values, ethnicity does not seem to be the single driving factor behind this cross-ethnic voting anomaly. It is necessary to emphasize the geographically localized nature of high levels of cross-ethnic support for ethnic parties and candidates. There was no general trend of voters ‘following their leader’s orders’ to support candidates from other ethno-nationalist parties. The spike in CE-EV support might instead be explained through local circumstances and pre-election dynamics.²⁴

In choosing electoral systems, ‘apt design and good timing are both required’ (Horowitz 1985, 684). Especially the added strain of political and economic transition reduces the chances for democratic stability and encourages voting along ethnic lines. In the context of the November 1990 elections in Bosnia and Herzegovina, these factors combined to create circumstances that were not conducive to cross-ethnic and non-ethnic politics. The ‘landslide’ dynamics inherent in block voting systems resulted in ethno-nationalist parties winning both seats within their own lists. Nevertheless, interethnic voting incentives within the BV-EL electoral system did allow for substantial cross-ethnic voting, even though not enough to decisively influence election results. More recently, elements of the BV-EL system have been proposed for current electoral reform in BiH (Bochsler 2012, 71–73, 80). Also, in light of these findings, it is intriguing to ask whether slightly higher levels of overall interethnic voting could have turned election results in favour of non-ethnic parties and candidates. Future research might attempt such analysis using a hypothetical electoral model.

The ‘common’ wisdom that democracy is more difficult to achieve in highly multi-ethnic societies proves to be wrong, but the other ‘common’ wisdom that bipolar ethnic arrangements have a negative influence on democratic stability is confirmed. It becomes clear that ethnic composition of the population should be viewed as a context condition to designing electoral systems (Wagner and Dreef 2013, 293). Reflecting on the BiH case study, I agree with both Horowitz (1985, 1991) and Reilly (1997, 2001) that ethnic diversity can be a positive factor for democracies, but also point out that the number of ethnic groups is not the only relevant factor. Their relation to each other, in terms of size and distribution (measured as ethnic fractionalization and polarization) is just as important and can prove to be the

decisive factor that influences both the type of electoral system that should be proposed for diverse societies and the perseverance of democratic stability.

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Notes

1. For a divergent view see Chandra (2005), who proposes that ethnicity can even sustain democracy given the right institutional setting, and Reilly (2000), who proposes that highly diverse societies can be conducive for democracy.
2. I will use the labels ‘consociationalism’ (proposed by Lijphart) and ‘centripetalism’ (proposed by Sisk) to describe the two approaches, thus avoiding the somewhat blurry term ‘power-sharing’ that can refer to both.
3. Most census data is defined in exclusive terms, not allowing for multiple ethnic, religious or other identities.
4. Also see prisoners dilemma argument by Nenad Stojanović in this issue.
5. Bosniaks were defined as ‘Muslims’ in 1990 and 1991 with the name change happening in 1993. The two group labels can be used interchangeably when referring to this period.
6. Municipalities were at the same time the basic electoral districts.
7. One candidate running for a ‘Muslim seat’ of the Presidency was independent and had no party affiliation.
8. The independent candidate running for the Presidency can also be classified as opposition and non-ethnic (‘liberal-reformist’).
9. For detailed election results for Parliament see Kapidžić (2013). See also other papers in this journal issue for further analysis of the 1990 BiH elections.
10. The data was collected close in time (November 1990 and March 1991) and can be treated as covering the same period. This allows for ethnic structure to be regarded as stable, even when taking into account transitional effects and the ethno-political context.
11. ZIPO is a Sarajevo company that was entrusted with processing the official electoral results, completing the process in late 1992. This election data was thought to be lost due to conflict, but was retrieved in 2012 by Analitika Sarajevo. The original data-set can be provided by the author upon request. The demographical data from the Federation BiH Institute for Statistics is based on 1991 census data and is readily available online (<http://www.fzs.ba/>).
12. The ethnic percentage of the population (census data) may not fully reflect the percentage of ethnic voters as the latter only includes the adult population.
13. Most votes were cast in Lištica municipality (since 1991 renamed to Široki Brijeg) (6.35), and the least in Tomislavgrad (2.97), with a standard deviation of 0.1 between municipalities.
14. The CE variable is calculated as follows: first, the number of votes for all candidates from one ethnic list are added up, divided by the number of valid votes, divided by two, and multiplied by 100. This intermediary value is the percentage of votes received by candidates of the same ethnicity. This value is then subtracted by the

- percentage of this ethnic group in the municipal population. The remaining value is the percentage of cross-ethnic votes on an ethnic list (CE) [$CE = (\text{sum } \#V(\text{etn_list}) / \#Val.V / 2 * 100) - \%etnPOP$]. In eight cases I end up with a negative CE value. This happens when the first assumption (A1) is not completely fulfilled. In only two cases is the negative CE value greater than -0.020 , which indicates minor inconsistencies.
15. Here I assume that Croats will predominantly cast both (two) votes for HDZ candidates, regardless of whether they vote for candidates from other ethnic groups. Bosniaks will predominantly vote for SDA or MBO, while Serbs will predominantly support SDS. While I acknowledge that not all voters of an ethnic group will support candidates from ethnic parties, I assume that the large majority of support for these candidates comes from voters of the same ethnicity.
 16. CE-EV is calculated as follows: first, the percentage of votes for candidates from ethnic parties (see Table 2) is summed up for each individual ethnic list. This value is divided by two (the number of votes per voter, per ethnic list), and then subtracted by the percentage of this ethnic group in the municipal population [$CE-EV = (\text{sum } \%EV(\text{etn_list}) / 2) - \%etnPOP$]. The resulting value has to be equal or greater than 0 [$CE-EV = /> 0$]; a negative value is noted as an intermediary value CE-EVx (for calculating CE-NEV), while for the CE-EV variable it is written as $CE-EVx = 0$.
 17. CE-NEV is calculated as follows: first the percentage of votes for candidates from non-ethnic parties (see Table 2) is summed up for each individual ethnic list. This value is divided by two (the number of votes per voter, per ethnic list), and then added to the intermediary (negative) CE-EVx value [$CE-NEV = (\%NEV(\text{etn_list}) / 2) + CE-EVx$]. The resulting value has to be greater than 0 [$CE-NEV = /> 0$]; a negative CE-NEV value is written as $CE-NEV = 0$.
 18. The CE-EV and CE-NEV variables for the Croat ethnic list for Bosanski Brod municipality are calculated as follows, under the first and second assumptions (A1 and A2). CE-EV indicated cross-ethnic support for the Croat HDZ party. The percentage of votes for the two HDZ candidates is summed up and then divided by two, the number of votes per voter [$(33.25 + 30.52) / 2 = 31.89$]. The percentage of Croats in the B.Brod population is then subtracted from the resulting value [$31.89 - 40.99 = -9.11$]. As the value for CE-EV has to be greater or equal to 0, we write $CE-EV = 0$, meaning there was no cross-ethnic support for the HDZ, while we note the negative intermediary value as $CE-EVx = -9.11$. CE-NEV indicates cross-ethnic support for candidates from non-ethnic parties (SK-SDP, SRJS, and SSO-DS) on the Croat ethnic list. The percentage of votes for these five candidates are summed up and then divided by two [$(15.93 + 21.13 + 7.41 + 13.09 + 22.8) / 2 = 40.18$]. The negative CE-EVx value is added to the result [$40.18 + (-9.11) = 31.07$]. CE-NEV is written as 31.07. The results for the Croat list in B.Brod municipality are 31.89% EV (whereof 0% CE-EV), and 40.18% NEV (whereof 31.07% CE-NEV). 27.93% votes for the Croat list were not cast. Results are calculated in the same way for all ethnic lists and all municipalities.
 19. This value only reflects cross-ethnic voting for the six ethnically defined seats of the Presidency and omits CE results for the 'Others' seat (omitted as this list included candidates from ethnic parties).
 20. I do not intend to contribute to the 'fractionalization vs. polarization debate' within econometric and quantitative literature on which measures best explain conflict potential and economic performance.
 21. Yugoslavs are often referred to as a collective multiethnic/non-ethnic denomination, and I group them into the 'other' category. While Yugoslavs are statistically relevant with a share of 5.55% of the population, all other ethnic, linguistic and religious groups individually account for less than 0.05% of the population.
 22. The criterion for outlier cases is a large standard deviation of 0.35 or more in CE values for the three ethnic lists. This points to a lack of general support for cross-ethnic voting. The excluded group consists of six geographically adjacent Croat-majority municipalities, and will be addressed in more detail later in this paper.
 23. The municipalities of Čitluk, Grude, Ljubuški, Neum, Posušje, and Lištica (Široki Brijeg).
 24. Uncovering these dynamics (and their content) could be possible through discursive analysis, in-depth interviews, or utilizing concepts of electoral geography.

Notes on contributor

Damir Kapidžić is an assistant lecturer and researcher at the Faculty of Political Science of the University of Sarajevo. He received his BA in Political Science from the University of Sarajevo (2005), MA in International Relations at the Free University Berlin, Humboldt University Berlin and University of Potsdam (2008) and his PhD in Political Science at the University of Sarajevo (2014). He is an associate researcher with the LSE-based Justice and Security Research Programme, and a guest researcher at the University Zurich. The main focus of his research is on elements and processes of democratization in multi-ethnic states, especially the links between institutions and ethnicity, while his main areas of interest are comparative politics, institutional design and hybrid political authority structures.

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Appendix 1.

Election results, BiH Presidency 1990			
Candidate (party)			
Two Bosniak (Muslim) members	Votes	% of votes	Candidate (party) Two Serb members
Fikret Abdić (SDA)	1,027,898	32.52	Biljana Plavšić (SDS)
Alija Izetbegović (SDA)	862,338	27.28	Nikola Koljević (SDS)
Nijaz Duraković (SK-SDP)	555,635	17.58	Nenad Kecmanović (SRSJ)
Džemal Sokolović (SRSJ)	184,621	5.84	Mirko Pejanović (SK-SDP)
Nazif Gijiva (SSO-DS)	133,263	4.22	Nikola Stojanović (SK-SDP)
Fejsal Hrustanović (SK-SDP)	122,118	3.86	Đorđe Latinović (SSO-DS)
Đevad Haznadar (SRSJ)	119,547	3.78	Ranko Zrilić (SRSJ)
Bahrudin Bijedić (independent)	103,953	3.29	Total
Adil Zulfikarpašić (MBO)	51,683	1.63	
Total	3,161,056	100.00	
			Votes
			567,074
			550,715
			498,630
			334,816
			237,442
			222,728
			160,304
			2,571,709
			% of votes
			22.05
			21.41
			19.39
			13.02
			9.23
			8.66
			6.23
			100.00
Two Croat members			
Stjepan Kijuić (HDZ)	469,113	22.16	One members of 'Others'
Franjo Boras (HDZ)	414,144	19.56	Ejup Ganić (SDA)
Ivo Komišić (SK-SDP)	352,312	16.64	Ivan Čerešnješ (SDS)
Zoran Perković (SK-SDP)	288,867	13.65	Josip Pejaković (SRSJ)
Franjo Bošković (SRSJ)	249,265	11.77	Zlatko Lagumdžija (SK-SDP)
Tadej Mateljan (SRSJ)	213,099	10.07	Azemina Vuković (SSO-DS)
Martin Raguž (SSO-DS)	130,198	6.15	Total
Total	2,116,998	100.00	1,626,067

Notes: Each voter had a total of seven votes, but was not obliged to cast all seven. The total number of votes therefore does not reflect the size of the electorate. Elected candidates in bold (all from ethno-nationalist parties).

Appendix 2.

	Municipality (names and status as 1991)	Population (No.)	Bosniaks (%)	Croats (%)	Serbs (%)	Others (%)	Ethnic FRAC	Ethnic POL
Ethnic composition of municipalities, ethnic fractionalization and ethnic polarization (1991 census)								
1	Banovići	26,590	72.06	2.07	16.98	8.89	0.444	0.706
2	Banja Luka	195,692	14.59	14.83	54.59	15.99	0.633	0.775
3	Bihać	70,732	66.08	7.89	17.94	8.10	0.518	0.745
4	Bijeljina	96,988	31.17	0.51	59.17	9.15	0.544	0.870
5	Bileća	13,284	14.66	0.29	80.01	5.04	0.336	0.595
6	Bosanska Dubica	31,606	20.38	1.54	68.75	9.33	0.477	0.756
7	Bosanska Gradiška	59,974	26.43	5.70	59.61	8.26	0.565	0.817
8	Bosanska Krupa	58,320	73.91	0.24	23.73	2.12	0.397	0.744
9	Bosanski Petrovac	15,621	21.05	0.31	74.86	3.78	0.394	0.709
10	Bosanski Brod	34,138	11.97	40.99	33.36	13.67	0.688	0.808
11	Bosanski Novi	41,665	33.70	0.97	60.24	5.09	0.521	0.889
12	Bosanski Šamac	32,960	6.77	44.69	41.35	7.18	0.620	0.879
13	Bosansko Grahovo	8,311	0.14	2.72	94.91	2.23	0.098	0.188
14	Bratunac	33,619	64.06	0.12	34.13	1.69	0.473	0.898
15	Brčko	87,627	44.07	25.39	20.69	9.85	0.689	0.798
16	Breza	17,317	75.53	4.91	12.25	7.30	0.407	0.640
17	Bugojno	46,889	42.01	34.19	18.50	5.31	0.670	0.839
18	Busovača	18,879	44.76	48.16	3.30	3.77	0.565	0.933
19	Cazin	63,409	97.29	0.22	1.23	1.26	0.053	0.104
20	Centar (Sarajevo)	79,286	50.15	6.85	20.98	22.03	0.651	0.809
21	Čajniče	8,956	44.93	0.06	52.58	2.43	0.521	0.971
22	Čapljina	27,882	27.52	53.69	13.46	5.34	0.615	0.827
23	Čelinac	18,713	7.73	0.41	88.46	3.40	0.210	0.388
24	Čitluk	15,083	0.74	98.28	0.13	0.86	0.034	0.067
25	Derventa	56,489	12.54	38.86	40.61	7.99	0.662	0.840
26	Doboj	102,549	40.14	12.93	38.83	8.09	0.665	0.837
27	Donji Vakuf	24,544	55.04	2.78	38.84	3.34	0.544	0.921
28	Drvar	17,126	0.19	0.19	96.98	2.64	0.059	0.117
29	Foča	40,513	51.32	0.23	45.21	3.24	0.531	0.965
30	Fojnica	16,296	49.24	40.64	0.96	9.16	0.584	0.915
31	Gornji Vakuf	25,181	55.85	42.52	0.44	1.20	0.507	0.967
32	Gacko	10,788	35.76	0.27	61.74	2.22	0.490	0.914
33	Glamoč	12,593	17.92	1.46	79.02	1.60	0.343	0.631
34	Goražde	37,573	69.99	0.21	26.20	3.60	0.440	0.796
35	Gračanica	59,134	72.04	0.22	22.93	4.81	0.426	0.751
36	Gradačac	56,581	59.84	15.22	19.83	5.11	0.577	0.790
37	Grude	16,358	0.02	99.10	0.06	0.83	0.018	0.036
38	Hadžići	24,200	63.60	3.08	26.29	7.02	0.520	0.815
39	Han Pijesak	6,348	40.06	0.11	57.88	1.95	0.504	0.951
40	Ilidža (Sarajevo)	67,937	43.18	10.21	36.84	9.77	0.658	0.839

(Continued)

Appendix 2. (Continued).

	Municipality (names and status as 1991)	Population (No.)	Bosniaks (%)	Croats (%)	Serbs (%)	Others (%)	Ethnic FRAC	Ethnic POL
41	Ilijaš	25,184	42.03	6.89	44.97	6.11	0.613	0.886
42	Jablanica	12,691	71.70	18.05	3.97	6.28	0.448	0.710
43	Jajce	45,007	38.62	35.13	19.25	7.01	0.686	0.824
44	Kakanj	55,950	54.56	29.59	8.81	7.04	0.602	0.834
45	Kalesija	41,809	79.26	0.08	18.32	2.34	0.338	0.633
46	Kalinovik	4,667	36.77	0.36	60.55	2.31	0.498	0.923
47	Kiseljak	24,164	40.47	51.94	3.06	4.54	0.564	0.920
48	Kladanj	16,070	72.31	0.22	24.59	2.87	0.416	0.765
49	Ključ	37,391	47.33	0.88	49.49	2.30	0.530	0.969
50	Konjic	43,878	54.28	26.24	15.09	4.40	0.612	0.827
51	Kotor Varoš	36,853	30.09	29.02	38.14	2.75	0.679	0.855
52	Kreševo	6,731	22.75	70.03	0.51	6.72	0.453	0.765
53	Kupres	9,618	8.34	39.64	50.57	1.45	0.580	0.911
54	Laktaši	29,832	1.37	8.60	81.04	8.99	0.328	0.555
55	Livno	40,600	14.27	72.23	9.64	3.87	0.447	0.689
56	Lopare	32,537	36.85	3.88	56.07	3.20	0.547	0.905
57	Lukavac	57,070	66.73	3.78	21.32	8.17	0.501	0.766
58	Ljubinje	4,172	7.96	0.93	89.84	1.27	0.186	0.352
59	Ljubuški	28,340	5.62	92.19	0.23	1.96	0.147	0.279
60	Maglaj	43,388	45.10	19.28	30.68	4.94	0.663	0.837
61	Modriča	35,613	29.13	27.53	35.20	8.14	0.709	0.806
62	Mostar	126,628	34.63	33.99	18.83	12.55	0.713	0.789
63	Mrkonjić Grad	27,395	11.94	7.81	76.86	3.38	0.388	0.624
64	Neum	4,325	4.39	87.68	4.79	3.14	0.226	0.399
65	Nevesinje	14,448	22.93	1.45	74.13	1.48	0.397	0.732
66	Novi Grad (Sarajevo)	136,616	50.82	6.51	27.52	15.16	0.639	0.821
67	Novi Travnik	30,713	37.85	39.60	13.34	9.21	0.674	0.828
68	Novo Sarajevo (Sarajevo)	95,089	35.65	9.25	34.60	20.50	0.703	0.805
69	Odžak	30,056	20.69	54.36	18.85	6.09	0.622	0.805
70	Olovo	16,956	74.89	3.79	18.83	2.49	0.402	0.686
71	Orašje	28,367	6.67	75.12	14.93	3.28	0.408	0.658
72	Pale	16,355	26.68	0.79	68.99	3.53	0.451	0.804
73	Posušje	17,134	0.04	99.00	0.05	0.91	0.020	0.039
74	Prijedor	112,543	43.85	5.61	42.28	8.26	0.619	0.881
75	Prnjavor	47,055	15.18	3.66	71.21	9.95	0.459	0.703
76	Prozor	19,760	36.57	62.04	0.23	1.16	0.481	0.924
77	Rogatica	21,978	60.10	0.09	38.18	1.63	0.493	0.938
78	Rudo	11,571	27.05	0.04	70.43	2.47	0.430	0.803
79	Sanski Most	60,307	46.65	7.17	42.06	4.12	0.599	0.900
80	Skender Vakuf	19,418	5.52	24.56	68.30	1.62	0.470	0.786
81	Sokolac	14,883	30.19	0.13	68.50	1.18	0.439	0.846
82	Srbac	21,840	4.30	0.64	88.75	6.31	0.207	0.377
83	Srebrenica	36,666	75.20	0.10	22.68	2.02	0.383	0.722
84	Srebrenik	40,896	74.65	6.73	12.98	5.64	0.418	0.653
85	Stari Grad (Sarajevo)	50,744	77.66	2.22	10.15	9.97	0.376	0.614
86	Stolac	18,681	43.36	33.12	20.97	2.54	0.658	0.861
87	Šekovići	9,629	3.39	0.10	93.78	2.73	0.119	0.226

(Continued)

Appendix 2. (Continued).

	Municipality (names and status as 1991)	Population (No.)	Bosniaks (%)	Croats (%)	Serbs (%)	Others (%)	Ethnic FRAC	Ethnic POL
88	Šipovo	15,579	19.03	0.20	79.16	1.60	0.337	0.641
89	Široki Brijeg	27,160	0.03	98.91	0.54	0.51	0.022	0.043
90	Teslić	59,854	21.39	15.91	55.07	7.63	0.620	0.796
91	Tešanj	48,480	72.07	18.42	6.33	3.17	0.442	0.710
92	Tomislavgrad	30,009	10.49	86.56	1.92	1.03	0.239	0.444
93	Travnik	70,747	44.97	36.92	10.99	7.12	0.644	0.851
94	Trebinje	30,996	17.97	4.02	68.88	9.13	0.483	0.733
95	Trnovo	6,991	68.52	0.23	29.45	1.80	0.443	0.837
96	Tuzla	131,618	47.61	15.50	15.40	21.49	0.679	0.781
97	Ugljevik	25,587	40.02	0.22	56.54	3.21	0.519	0.944
98	Vareš	22,203	30.24	40.61	16.41	12.74	0.700	0.794
99	Velika Kladuša	52,908	91.30	1.40	4.28	3.02	0.163	0.301
100	Visoko	46,160	74.46	4.06	16.19	5.29	0.415	0.671
101	Višegrad	21,199	63.55	0.15	31.81	4.50	0.493	0.873
102	Vitez	27,859	41.33	45.50	5.39	7.79	0.613	0.885
103	Vlasenica	33,942	55.17	0.11	42.30	2.41	0.516	0.961
104	Vogošća (Sarajevo)	24,647	50.71	4.35	35.76	9.19	0.605	0.873
105	Zavidovići	57,164	59.82	13.25	20.36	6.56	0.579	0.784
106	Zenica	145,517	55.22	15.47	15.42	13.89	0.628	0.774
107	Zvornik	81,295	59.17	0.15	37.96	2.72	0.505	0.932
108	Žepče	22,966	47.11	39.62	9.92	3.34	0.610	0.889
109	Živinice	54,783	80.35	7.26	6.43	5.96	0.341	0.556

Appendix 3.

Electoral indicator values for BiH municipalities in 1990/1991

	Municipality (names and status as 1991)	CE (all lists)	CE-EV (all can.)	CE-NEV (all can.)	CE-EV (Bosniak c.)	CE-NEV (Bosniak c.)	CE-EV (Serb c.)	CE-NEV (Serb c.)	CE-EV (Croat c.)	CE-NEV (Croat c.)
1	Banovići	0.295	0.011	0.285	0.000	0.185	0.000	0.308	0.032	0.361
2	Banja Luka	0.367	0.009	0.357	0.028	0.407	0.000	0.280	0.000	0.385
3	Bihac	0.238	0.003	0.234	0.000	0.209	0.000	0.222	0.010	0.271
4	Bijeljina	0.209	0.011	0.198	0.000	0.139	0.000	0.198	0.034	0.257
5	Bileća	0.375	0.021	0.354	0.000	0.492	0.000	0.114	0.062	0.456
6	Bosanska Dubica	0.242	0.010	0.232	0.001	0.300	0.000	0.124	0.030	0.271
7	Bosanska Gradiška	0.173	0.006	0.167	0.000	0.170	0.000	0.156	0.018	0.175
8	Bosanska Krupa	0.108	0.010	0.098	0.000	0.028	0.000	0.142	0.031	0.124
9	Bosanski Brod	0.420	0.062	0.358	0.186	0.425	0.000	0.338	0.000	0.311
10	Bosanski Novi	0.160	0.017	0.143	0.000	0.120	0.000	0.139	0.050	0.169
11	Bosanski Petrovac	0.148	0.009	0.139	0.000	0.183	0.000	0.057	0.027	0.177
12	Bosanski Šamac	0.240	0.046	0.193	0.139	0.236	0.000	0.159	0.000	0.185
13	Bosansko Grahovo	0.122	0.015	0.113	0.042	0.187	0.000	0.000	0.002	0.152
14	Bratunac	0.116	0.027	0.091	0.000	0.000	0.021	0.146	0.060	0.126
15	Brčko	0.429	0.044	0.385	0.034	0.348	0.000	0.442	0.097	0.366
16	Breza	0.381	0.054	0.327	0.000	0.176	0.052	0.414	0.111	0.391
17	Bugojno	0.301	0.065	0.235	0.188	0.195	0.000	0.300	0.008	0.210
18	Busovača	0.343	0.090	0.253	0.155	0.229	0.114	0.315	0.000	0.214
19	Cazin	0.046	0.007	0.039	0.000	0.000	0.005	0.061	0.017	0.055
20	Centar (Sarajevo)	0.499	0.016	0.483	0.000	0.398	0.000	0.510	0.049	0.540
21	Čajniče	0.088	0.010	0.078	0.000	0.050	0.000	0.072	0.030	0.112
22	Čapljina	0.434	0.184	0.250	0.445	0.157	0.046	0.417	0.062	0.177
23	Čelinac	0.187	0.024	0.163	0.023	0.221	0.000	0.056	0.048	0.212
24	Čitluk	0.476	0.317	0.159	0.937	0.014	0.014	0.453	0.000	0.009
25	Derventa	0.363	0.081	0.281	0.244	0.319	0.000	0.250	0.000	0.276
26	Doboj	0.308	0.006	0.303	0.000	0.283	0.000	0.276	0.018	0.349
27	Donji Vakuf	0.209	0.014	0.195	0.000	0.208	0.000	0.136	0.042	0.240
28	Drvar	0.201	0.027	0.180	0.048	0.297	0.000	0.000	0.033	0.244
29	Foča	0.160	0.011	0.149	0.000	0.192	0.000	0.069	0.034	0.185
30	Fojnica	0.257	0.100	0.158	0.237	0.146	0.062	0.185	0.000	0.142

(Continued)

Appendix 3. (Continued).

Electoral indicator values for BiH municipalities in 1990/1991

	Municipality (names and status as 1991)	CE (all lists)	CE-EV (all can.)	CE-NEV (all can.)	CE-EV (Bosniak c.)	CE-NEV (Bosniak c.)	CE-EV (Serb c.)	CE-NEV (Serb c.)	CE-EV (Croat c.)	CE-NEV (Croat c.)
31	Gacko	0.129	0.024	0.105	0.000	0.104	0.026	0.102	0.045	0.108
32	Glamoč	0.116	0.006	0.110	0.000	0.132	0.000	0.053	0.017	0.146
33	Goražde	0.135	0.011	0.125	0.000	0.067	0.000	0.147	0.032	0.160
34	Gornji Vakuf	0.096	0.011	0.085	0.019	0.069	0.013	0.109	0.000	0.077
35	Gračanica	0.283	0.027	0.256	0.000	0.144	0.000	0.298	0.080	0.326
36	Gradačac	0.233	0.008	0.225	0.000	0.202	0.000	0.241	0.025	0.230
37	Grude	0.554	0.316	0.240	0.940	0.013	0.009	0.707	0.000	0.000
38	Hadžići	0.298	0.015	0.283	0.000	0.223	0.000	0.273	0.046	0.353
39	Han Pijesak	0.173	0.015	0.157	0.000	0.120	0.000	0.141	0.045	0.211
40	Ilidža (Sarajevo)	0.341	0.003	0.338	0.000	0.358	0.000	0.275	0.010	0.379
41	Ilijaš	0.323	0.002	0.321	0.000	0.386	0.000	0.220	0.007	0.357
42	Jablanica	0.391	0.052	0.338	0.000	0.180	0.061	0.460	0.096	0.374
43	Jajce	0.347	0.028	0.319	0.084	0.327	0.000	0.332	0.000	0.298
44	Kakanj	0.346	0.059	0.287	0.080	0.268	0.098	0.325	0.000	0.266
45	Kalesija	0.126	0.014	0.112	0.000	0.055	0.000	0.138	0.042	0.143
46	Kalinovik	0.171	0.011	0.160	0.000	0.182	0.000	0.090	0.032	0.208
47	Kiseljak	0.212	0.060	0.152	0.142	0.170	0.038	0.198	0.000	0.087
48	Kladanj	0.370	0.028	0.341	0.000	0.225	0.000	0.346	0.085	0.452
49	Ključ	0.162	0.011	0.151	0.000	0.096	0.000	0.159	0.035	0.199
50	Konjic	0.232	0.032	0.200	0.016	0.179	0.031	0.232	0.049	0.189
51	Kotor Varoš	0.179	0.018	0.161	0.054	0.167	0.000	0.150	0.001	0.164
52	Kreševo	0.386	0.136	0.250	0.316	0.270	0.093	0.377	0.000	0.102
53	Kupres	0.285	0.114	0.171	0.340	0.073	0.000	0.363	0.003	0.077
54	Laktaši	0.224	0.023	0.200	0.069	0.284	0.000	0.068	0.001	0.249
55	Livno	0.319	0.168	0.151	0.505	0.117	0.000	0.203	0.000	0.132
56	Lopare	0.158	0.004	0.155	0.000	0.206	0.000	0.060	0.012	0.197

(Continued)

Appendix 3. (Continued).

Electoral indicator values for BiH municipalities in 1990/1991

Municipality (names and status as 1991)	CE (all lists)	CE-EV (all can.)	CE-NEV (all can.)	CE-EV (Bosniak c.)	CE-NEV (Bosniak c.)	CE-EV (Serb c.)	CE-NEV (Serb c.)	CE-EV (Croat c.)	CE-NEV (Croat c.)
Electoral indicator values for BiH municipalities in 1990/1991 (cont.)									
Municipality (names and status as 1991)	CE (all lists)	CE-EV (all can.)	CE-NEV (all can.)	CE-EV (Bosniak c.)	CE-NEV (Bosniak c.)	CE-EV (Serb c.)	CE-NEV (Serb c.)	CE-EV (Croat c.)	CE-NEV (Croat c.)
57 Lukavac	0.340	0.015	0.325	0.000	0.157	0.000	0.415	0.045	0.402
58 Ljubinje	0.120	0.013	0.107	0.017	0.170	0.000	0.008	0.023	0.141
59 Ljubuški	0.473	0.304	0.170	0.875	0.033	0.017	0.444	0.019	0.033
60 Maglaj	0.217	0.009	0.207	0.000	0.191	0.000	0.183	0.028	0.249
61 Modriča	0.369	0.021	0.347	0.063	0.341	0.000	0.369	0.001	0.333
62 Mostar	0.426	0.044	0.382	0.111	0.363	0.000	0.427	0.021	0.356
63 Mrkonjić Grad	0.189	0.010	0.179	0.019	0.225	0.000	0.109	0.010	0.204
64 Neum	0.422	0.257	0.166	0.755	0.060	0.015	0.384	0.000	0.053
65 Nevesinje	0.235	0.022	0.213	0.021	0.366	0.000	0.015	0.045	0.259
66 Novi Grad (Sarajevo)	0.418	0.014	0.403	0.000	0.344	0.000	0.399	0.043	0.467
67 Novi Travnik	0.339	0.028	0.311	0.067	0.320	0.017	0.361	0.000	0.253
68 Novo Sarajevo (Sarajevo)	0.506	0.005	0.500	0.000	0.494	0.000	0.440	0.016	0.567
69 Odžak	0.241	0.040	0.201	0.119	0.236	0.000	0.177	0.000	0.191
70 Olovo	0.253	0.034	0.219	0.000	0.139	0.000	0.249	0.101	0.269
71 Orašje	0.305	0.204	0.100	0.562	0.115	0.050	0.136	0.000	0.049
72 Pale	0.228	0.016	0.212	0.000	0.205	0.000	0.173	0.047	0.259
73 Posušje	0.333	0.225	0.117	0.659	0.031	0.016	0.321	0.000	0.000
74 Prijedor	0.308	0.015	0.293	0.000	0.302	0.000	0.235	0.044	0.344
75 Prnjavor	0.223	0.006	0.217	0.000	0.241	0.000	0.155	0.017	0.256
76 Prozor	0.229	0.142	0.088	0.343	0.068	0.021	0.117	0.061	0.079
77 Rogatica	0.193	0.022	0.171	0.000	0.119	0.000	0.159	0.065	0.235

(Continued)

Appendix 3. (Continued).

Electoral indicator values for BiH municipalities in 1990/1991

	Municipality (names and status as 1991)	CE (all lists)	CE-EV (all can.)	CE-NEV (all can.)	CE-EV (Bosniak c.)	CE-NEV (Bosniak c.)	CE-EV (Serb c.)	CE-NEV (Serb c.)	CE-EV (Croat c.)	CE-NEV (Croat c.)
78	Rudo	0.113	0.011	0.102	0.000	0.164	0.000	0.002	0.034	0.140
79	Sanski Most	0.251	0.015	0.236	0.000	0.211	0.000	0.228	0.046	0.268
80	Skender Vakuf	0.158	0.029	0.131	0.087	0.209	0.000	0.000	0.000	0.185
81	Sokolac	0.151	0.016	0.135	0.000	0.180	0.000	0.048	0.047	0.178
82	Srbac	0.173	0.016	0.157	0.022	0.248	0.000	0.014	0.026	0.207
83	Srebrenica	0.129	0.028	0.102	0.000	0.044	0.000	0.138	0.083	0.124
84	Srebrenik	0.347	0.024	0.322	0.000	0.123	0.000	0.436	0.073	0.407
85	Stari Grad (Sarajevo)	0.331	0.035	0.296	0.000	0.135	0.022	0.394	0.084	0.359
86	Stolac	0.309	0.108	0.202	0.222	0.149	0.010	0.285	0.091	0.171
87	Šekovići	0.264	0.033	0.247	0.044	0.402	0.000	0.000	0.055	0.340
88	Šipovo	0.149	0.017	0.131	0.000	0.150	0.000	0.075	0.052	0.169
89	Široki Brijeg	0.585	0.309	0.275	0.905	0.027	0.000	0.795	0.000	0.003
90	Teslić	0.315	0.025	0.291	0.074	0.322	0.000	0.266	0.000	0.284
91	Tešanj	0.256	0.002	0.253	0.000	0.198	0.007	0.314	0.000	0.249
92	Tomislavgrad	0.136	0.080	0.056	0.237	0.039	0.002	0.089	0.000	0.040
93	Travnik	0.208	0.000	0.208	0.000	0.216	0.000	0.224	0.000	0.184
94	Trebinje	0.211	0.014	0.198	0.000	0.220	0.000	0.152	0.041	0.221
95	Trnovo	0.215	0.034	0.180	0.000	0.192	0.000	0.123	0.103	0.226
96	Tuzla	0.546	0.000	0.546	0.000	0.416	0.000	0.635	0.000	0.586
97	Ugljevik	0.130	0.009	0.121	0.000	0.117	0.000	0.094	0.028	0.151
98	Vareš	0.439	0.019	0.420	0.039	0.464	0.017	0.482	0.000	0.315
99	Velika Kladuša	0.078	0.006	0.072	0.000	0.050	0.000	0.082	0.017	0.085
100	Visoko	0.208	0.010	0.197	0.000	0.146	0.000	0.209	0.031	0.238
101	Višegrad	0.162	0.015	0.147	0.000	0.107	0.000	0.162	0.044	0.173
102	Vitez	0.430	0.083	0.348	0.197	0.264	0.050	0.499	0.000	0.280
103	Vlasenica	0.121	0.020	0.102	0.000	0.036	0.003	0.134	0.056	0.135
104	Vogošća (Sarajevo)	0.375	0.018	0.357	0.000	0.311	0.000	0.326	0.054	0.435

(Continued)

Appendix 3. (Continued).

Electoral indicator values for BiH municipalities in 1990/1991

Municipality (names and status as 1991)	CE (all lists)	CE-EV (all can.)	CE-NEV (all can.)	CE-EV (Bosniak c.)	CE-NEV (Bosniak c.)	CE-EV (Serb c.)	CE-NEV (Serb c.)	CE-EV (Croat c.)	CE-NEV (Croat c.)
105 Zavidovići	0.213	0.018	0.195	0.016	0.186	0.009	0.200	0.029	0.198
106 Zenica	0.364	0.000	0.364	0.000	0.317	0.000	0.387	0.000	0.389
107 Zvornik	0.111	0.011	0.100	0.000	0.054	0.000	0.119	0.033	0.127
108 Žepče	0.159	0.002	0.157	0.000	0.152	0.006	0.172	0.000	0.148
109 Živinice	0.220	0.002	0.218	0.000	0.142	0.005	0.278	0.000	0.235