The Electoral System and Election Results: The Case of the Elections to the Sejm of the Republic of Poland

Jacek Haman[1]

Abstract

The article examines the impact of nine counterfactual modifications to the Polish electoral system on the results of the Sejm elections held on October 15, 2023. Scenarios analyzed include various methods of demographic seat adjustments, redistribution of overseas votes, changes to proportionality methods (D'Hondt vs. Sainte-Laguë), and changing the number of electoral districts. The issue of how deeper changes to the system may affect the strategic behavior of parties and voters is also analyzed. Results indicate that while each modification slightly alters seat distribution among parties, most changes do not significantly affect the overall balance of power in the Sejm.

Keywords: elections, electoral system, counterfactual analysis, demographic adjustment, mechanical effect.

[1]   Jacek Haman – Faculty of Sociology, University of Warsaw, Poland, e-mail: jhaman@is.uw.edu.pl; ORCID: 0000-0001-7715-3775.

"It is not important who votes, but who counts the votes." This sentiment,[2] expressed by extreme cynics and pessimists regarding Poland's parliamentary elections, is fortunately misguided; the integrity of the vote-counting process in Polish elections is generally reliable. However, let us examine a related assertion: "It is not important how voters vote, but *how* the votes are counted," that is, how the votes are translated into seats. Is this statement also inaccurate?

In this article, I analyze several counterfactual scenarios regarding the elections for the Polish Sejm held on October 15, 2023, using various modifications of the electoral system. The election results[3] are inherently influenced by the electoral system; if they were not, there would be little reason to consider different electoral frameworks. Recent Polish history provides excellent examples in this regard: it was due to the application of the majority voting method in the 1989 elections that the communists lost power, even though the other election conditions were imposed in such a way as to make this practically impossible (see Kaminski, 1999). As a result of changes in electoral law four years later, the post-communist party was able to dominate the Sejm in 1993 (see Kaminski, Lissowski, & Swistak, 1998). The influence of the voting method on election outcomes tempts manipulation of the electoral system for achieving particular political benefits. However, the complexity of the relationships between the electoral system and the elections results often means that the effect of introduced changes is contrary to what was intended (see, e.g., Evci & Kaminski 2020; 2021) or that changes made to the electoral system had completely unforeseen "side effects."

Following M. Duverger's terminology, the electoral system affects election outcomes through "mechanical" and "psychological effects" (Duverger, 1959, p. 224 nn). Although Duverger originally focused on the distinctions between majority and proportional systems and their impact on voter behavior, these concepts can also apply to more nuanced differences between systems.

Mechanical effects refer to the phenomenon where identical distributions of votes for parties or candidates result in different allocations of mandates under varying electoral systems. *Psychological effects* are more intricate; voters may strategically choose to support parties or candidates they believe are likely to succeed within a given electoral framework. Political parties are also likely to anticipate these mechanical effects and strategic voter behavior; they may choose to form alliances or integrate, or conversely, decide against collaboration or even fragment. Consequently, voters will adjust their support in response to changes in party offerings.[4]

For instance, if we were to alter the electoral system for the Polish Sejm by replacing proportional elections with a first past the post (FPTP) system in single-member districts, we

---

[2] The sentence (in a more extended form: "I consider it completely unimportant who in the party will vote, or how; but what is extraordinarily important is this – who will count the votes, and how") attributed to J. Stalin (Jay 2010, p. 299).

[3] For the sake of simplicity, for the purposes of this article, by "election results" I will mean the outcome of the distribution of mandates among competing parties (the number of mandates allocated to each list). Where I refer to the "voting results," I will mean the distribution of voters' votes. Meanwhile, I treat "electoral system" as all the factors that determine how voters' votes are converted into mandates for parties (thus transforming the "voting result" into the "election result"), which includes both the "electoral formula" and the structure of electoral districts along with the allocation of mandates among districts.

[4] The intricate dynamics of the relationships between strategic alliances, party divisions, and voter support were thoroughly examined in a notable work by Marek Kamiński (2001), particularly in relation to the elections of 1993 and 1997. Despite the passage of time, his general conclusions remain relevant.

could expect that only candidates from the largest parties would have a genuine chance of winning seats (mechanical effects). Supporters of smaller parties, recognizing this reality, might "strategically" vote for candidates from larger parties who align more closely with their views, considering them the "lesser evil" compared to the risk of a representative from a less favorable major party winning (psychological effects). Anticipating these dynamics, politicians from smaller parties – either individually or as part of their organizations – would likely seek alliances with major parties to avoid complete marginalization. Meanwhile, larger parties would strive to attract both politicians and voters from smaller parties, aware that even a small number of votes could be decisive in an election (strategic responses of political parties). The term "psychological effects" is somewhat historical; it would be more accurate to refer to them as "strategic effects." Therefore, addressing the question of "what would happen in an election under a different electoral system" necessitates first examining the magnitude of both "mechanical" and "strategic" effects – though this is not always feasible, and answers may only be approximated.

When considering "mechanical effects," it is important to recognize that electoral systems can dictate various ways for voters to express their political preferences (or allow different aspects of these preferences to be expressed). For example, a voter may convey different intentions when voting on closed, semi-closed, or open lists, or by selecting one or multiple candidates. If the voting ballot remains identical across the compared electoral systems, estimating "mechanical effects" would involve straightforward calculations only that are free from uncertainty (as they do not rely on additional assumptions). However, if the electoral systems entail different ballots, it becomes necessary to make assumptions about how voters would behave in an alternative system based on their behavior in the original system – while still assuming that voters are casting their votes "sincerely," without considering any potential "strategic effects." In some scenarios, these assumptions are quite intuitive. For instance, one might reasonably assume that in FPTP elections, voters would cast a "sincere" vote for a candidate endorsed by the party they supported in proportional elections with a closed list. However, complications arise when comparing closed-list voting (where support is limited to one party) with systems that allow voters to rank candidates (such as single transferable vote), which enables them to express support for multiple parties. Assuming that a voter ranks all candidates from their preferred party at the top of their list – or conversely, that in PR election, they vote for the party whose candidate they ranked first in the STV election – might accurately reflect the behavior of many voters but would still simplify reality and introduce uncertainty regarding the precision of simulation results.

Estimating "strategic effects" presents even greater challenges. While it is often possible to predict their general direction, quantifying their strength requires significant assumptions. Modeling these phenomena necessitates establishing many parameters based largely on arbitrary decisions. Consequently, results derived in this manner can, at best, be regarded as "hypotheses" or "potential scenarios," indicating possibilities rather than certainties. However, if the differences between the electoral systems being compared are relatively minor, it may be reasonable to assume that variations in how "strategic effects" operate are negligible enough to ignore without incurring substantial errors.

I will analyze alternative scenarios for elections to the Sejm based on various modifications to the current electoral system. These modifications will include changes in mandate distribu-

tion among electoral districts, adjustments in counting votes from abroad, alterations in the number of electoral districts, and revisions to the electoral formula. Modifications affecting voting ballots will not be considered, which would allow for straightforward recalculation of mandate distribution. In most cases analyzed, it is reasonable to assume that these changes would not significantly alter the electoral strategies of voters and parties. Only in one instance will I present simulation results that account for modeled "strategic effects."

Modifications to the Electoral System and Alternative Scenarios

According to the relevant legislation (Electoral Code, *Kodeks Wyborczy*), 460 deputies to the Sejm are to be elected in proportional elections, utilizing semi-closed lists across 41 independent electoral districts. These districts vary in magnitude, with each district having between 7 and 20 seats, averaging 11.22 seats. The D'Hondt method is employed for seat allocation within these districts. Only parties that secure at least 5% of the nationwide vote (or 8% for coalition[5]) are eligible for seat distribution.

The regulations contained in the Electoral Code regarding the distribution of mandates among electoral districts are redundant. On the one hand, the Electoral Code directly specifies the number of mandates assigned to individual districts, and on the other hand, it provides detailed rules for conducting apportionment (the distribution is to be proportional to the district's population and carried out according to the method defined in the Code), as well as rules concerning "demographic adjustment." Consequently, although the Electoral Code mandates changes in the distribution of seats among districts in the event of demographic changes, implementing such a correction requires amending the content of the Electoral Code through legislation. Despite the occurrence of conditions warranting such a demographic adjustment, it has never been carried out since the Electoral Code came into effect in 2011, despite requests from the National Electoral Commission for corrections in 2015, 2018, and 2022.

The scenarios for changes to the electoral system being discussed in this article reflect various viewpoints in Polish public debate. Some proposals align with specific solutions suggested by different institutions or groups, while others seek to address shortcomings identified by various stakeholders. Whether I personally agree with these proposals or criticisms is less important than acknowledging their presence in public discourse.

Several deficiencies in the Polish electoral system are evident:

- **Lack of demographic adjustment**: The demographic adjustment of mandate distribution among electoral districts has not occurred since 2011, despite clear provisions in

---

[5]   The term "coalition" in the context of Polish elections is ambiguous. A "coalition list" can refer to a list featuring candidates representing several cooperating parties or organizations. Such a list may be formally submitted as a "coalition electoral committee list" or as the list of one dominant party within the coalition. The latter option is often politically more convenient due to a higher electoral threshold for "coalition committees" (8% instead of 5%), which means that most "actual coalitions" are not formally recognized as such. Finally, parties presenting separate lists in elections can form a governing coalition afterward, often with intentions declared before the elections. Since the specific meaning of "coalition" always depends on context, I will use it in the text in each of these three senses.

the Electoral Code. This has resulted in an unjust inflation or deflation of voting power among voters from different districts.

- **Questionable data sources**: The basis for distributing mandates among districts relies on data sources whose accuracy is disputable.
- **Impact of votes cast abroad**: The Electoral Code stipulates that all votes cast abroad are counted towards the votes in the electoral district covering Warsaw. However, this is not considered when distributing mandates among districts, leading to an unjust reduction in voting power for Warsaw residents (See e.g. Cześnik *et al.*, 2022, p. 149 nn).

Other criticisms of the current electoral system are more contentious but remain active topics in political and academic discussions:

- **Voter power and turnout**: In the current system, a voter's influence is affected by turnout in their district – higher turnout results in lower voting power for each individual voter. While this may seem unfair, it can be argued that Members of Parliament (MPs) represent both voters and non-voters, justifying a mandate distribution based on population rather than votes cast.
- **Proportionality issues**: Although Poland's electoral system is intended to be "proportional," as outlined in the Constitution, it exhibits a strong progression of proportionality[6] due to a combination of relatively small electoral districts and the D'Hondt method. This approach was originally adopted in 1993 to counteract extreme fragmentation in Parliament following the 1991 elections.[7] After thirty years, it may be time to reconsider this effective remedy or at least adjust its application.
- **Increasing districts**: Recent public debates[8] have revisited the idea of increasing the number of electoral districts from 41 to 100. This change would significantly reduce the average size of districts and would make the proportionality of the distribution even more progressive.

The nine analyzed "alternative scenarios" propose modifications to Poland's electoral system that aim to address these issues or reflect potential directions for change currently under consideration in public discourse.

---

[6]   A detailed discussion of the concepts of degressive and progressive proportionality in the distribution of mandates is contained in (Haman, 2017a) and (Haman, 2017b); generally, a stronger progression in distribution means a greater privileging of larger parties over those with less support.

[7]   The D'Hondt method has been used in all elections to the Sejm since 1993, except for the elections in 2001 when it was replaced once by the Sainte-Laguë method.

[8]   See e.g.: *100 okręgów, czyli wyborczy Polski Ład.* Available: https://oko.press/100-okregow-czyli-wyborcza-zbrodnia-doskonala (accessed: 28.11.2023); *100 okręgów, czyli wyborczy Polski Ład | Obywatele.News.* Available from: https://obywatele.news/100-okregow-czyli-wyborczy-polski-lad/ (accessed: 28.11.2023); *Bliżej do zmian w ordynacji. Im więcej okręgów, tym lepiej – tylko dla kogo?* Available from https://www.gazetaprawna.pl/wiadomosci/kraj/artykuly/8515960,zmiany-w-ordynacji-sejm-kaczynski-pis-mandaty-sceptycy-prezydent.html (accessed: 28.11.2023); *PiS szykuje gorącą jesień.* Available from: https://www.rp.pl/polityka/art8871751-pis-szykuje-goraca-jesien (accessed: 28.11.2023).

Scenarios for Demographic Adjustment of Seat Distribution among Electoral Districts

The rules governing demographic adjustments for seat distribution among electoral districts in Poland are outlined in Article 203 of the Polish Electoral Code, while the method of apportionment to be used is described in Article 202.[9] According to these regulations, the National Electoral Commission calculates the appropriate distribution of mandates based on the number of residents in electoral districts at the end of the third quarter of the penultimate year of the Sejm's term (specifically, in 2014, 2018, and 2022). This calculation is then submitted to the Sejm for approval. The finalized distribution is documented in an annex to the Electoral Code and must be adopted through an amendment to this law. However, Sejm has yet to initiate action to implement the National Electoral Commission's recommendations. As a result, the current distribution of mandates recorded in the Electoral Code remains inconsistent with the stipulated regulations.

The cumulative effect of not conducting demographic adjustments impacts more than half (21 out of 41) electoral districts. According to a proposal from the National Electoral Commission[10] in 2022, adjustments would require shifting 11 mandates: 11 districts would lose one seat each, ten districts would gain one seat each, and one district would gain two seats (see Table A1 in Appendix for details).

Alternative Scenario 1 proposes modifying the Polish electoral system by realigning mandate distribution among the 41 electoral districts according to the latest recommendations from the National Electoral Commission.

Article 202 of the Electoral Code links mandate distribution to "the number of residents." However, operationalizing this concept is complex and is primarily governed by an executive act issued under the Electoral Code: a regulation by the Minister of Internal Affairs and Administration concerning "ensuring that the National Electoral Commission performs tasks related to overseeing voter registration and compiling voter lists." This regulation designates the "population register" as the source of data on resident numbers. In Poland, this "population register," known as the PESEL register, refers to "registered addresses." The legal requirement for registration – a remnant from the communist era – is not strictly enforced in practice, leading to an estimated several million people living at addresses different from their officially registered ones. The Polish Central Statistical Office publishes data on actual resident numbers in particular localities based on census data rather than PESEL registers, giving these figures an "official" status (see: Turlejski *et al.*, 2023).[11]

If adjustments were based on census data reflecting actual resident numbers rather than registry data, shifts would still affect 21 districts but would involve a total adjustment of 14 mandates: 11 districts would lose one seat each, one district would lose two seats, four dis-

---

[9]   The rule of proportional distribution of mandates among electoral districts described in Article 202 of the Electoral Code has no equivalent among commonly used methods for proportional apportionment of mandates. It has several significant drawbacks, such as sensitivity to paradoxes as Alabama, population, "new state" (see Haman, 2002). However, in practice, it leads to distributions close (although not always identical) to the Sainte Laguë method.

[10] Letter from the Chairman of the National Electoral Commission, Sylwester Marciniak, to the Speaker of the Sejm of the Republic of Poland, Elżbieta Witek, dated October 21, 2022, reference number ZPOW.520.1.2022.

[11] See Turlejski *et al.*, 2023.

tricts would gain one seat each, two districts would gain two seats each, and two districts would gain three seats each (see Table A1 in Appendix for details).

Notably, demographic adjustments based on census data would likely lead to increased representation for districts encompassing major cities and those surrounding Warsaw. This is due to significant discrepancies between "registered residents" and "actual residents," primarily stemming from unrecorded migrations from rural areas to urban centers.

Alternative Scenario 2 suggests modifying the Polish electoral system by adjusting seat distribution among electoral districts to align with Article 202 of the Electoral Code while utilizing resident data derived from Census 2021. This approach aims to ensure that mandate distribution accurately reflects current demographic realities across all electoral districts.

Scenarios for Handling Overseas Votes

Since the memorable elections in 1989, subsequent electoral laws directed all overseas votes to Warsaw-based districts. Under the regulations of Electoral Code of 2011, for Sejm elections, these votes go to District 19 (Warsaw), while Senate votes are counted in District 44 (covering specific Warsaw quarters). This arrangement creates a significant imbalance, as overseas voters now constitute approximately one-third of total votes in District 19 for Sejm elections, and over two-thirds in District 44 for Senate elections, but the number of mandates allocated to Sejm District 19 and the boundaries of Senate District 44 are determined based on their territorial population only. In other words, including overseas votes in Warsaw's districts reduced voting power for Warsaw residents in Sejm elections by one-third, whereas in Senate elections – the voting strength for District 44 residents was reduced more than threefold.

I consider two alternative scenarios addressing overseas votes. In one scenario, foreign polling stations would be randomly assigned to different electoral districts. This would ensure a more equal distribution of overseas votes and could be applied both for Sejm and Senate elections. In this article, I am only concerned with the Sejm elections, but it is evident that issues with overseas votes in Senate elections are even more pressing. In the other scenario, seats would be distributed based on actual votes cast rather than population. Apart from solving the problem of overseas votes (districts receiving overseas votes would get proportionally more mandates), such a solution would automatically adjust for demographic changes and migration patterns and reward districts with higher voter turnout. Therefore, this would be a common answer to the three problems discussed earlier.

Alternative Scenario 3 proposes that overseas votes are distributed among electoral districts proportionally according to the number of mandates allocated within each district – which corresponds to expected additional vote counts under the random assignment of overseas polling stations.

Alternative Scenario 4 proposes that mandates distributed within districts are determined according to an algorithm from Article 202 of the Electoral Code, with respect to votes cast within each district (including overseas votes for District 19) rather than population numbers.

Scenarios Involving Changes in Progressiveness of Proportional Seat Allocation

The strength of progressiveness in proportional seat allocation is primarily influenced by three factors: the electoral formula, the average district magnitude, and the applicable legal electoral thresholds. The D'Hondt formula tends to favor larger parties, thereby enhancing progressiveness, whereas the Sainte-Laguë method does not provide similar advantages either to larger nor moderate-support parties.[12]

The size of electoral districts affects progressiveness in two significant ways: Smaller districts amplify the effects of the D'Hondt method. When seats are allocated on a national level, the differences between the D'Hondt and Sainte-Laguë methods are generally minimal. However, as districts shrink in size, these differences become more pronounced. Also, smaller districts lead to higher "natural electoral thresholds," meaning that in more districts, parties with low or moderate support may fail to secure any seats. These natural thresholds can have a more substantial impact than legal thresholds, as they influence not only the least supported parties but also those with moderate backing.

I will outline three scenarios that assume a weakening of progressiveness in the proportional allocation of mandates among party lists, followed by two scenarios that suggest a strengthening.

Alternative Scenario 5 proposes replacing the D'Hondt method with the Sainte-Laguë method while keeping the existing structure of electoral districts and the number of mandates distributed within them. This change would revert to the primary features of the electoral system used during the 2001 parliamentary elections.

Alternative Scenarios 6 and 7 involve allocating mandates at the national level without regard for electoral districts while retaining the D'Hondt method. In **Scenario 6**, I propose maintaining a 5% legal electoral threshold. **In Scenario 7**, this threshold would be abolished entirely.

Alternative Scenarios 8 and 9 involve dividing the country into 100 electoral districts for the Sejm, mirroring those currently used for Senate elections. The distribution of mandates in each district will follow the rules outlined in Article 202 of the Electoral Code (refer to Table A2 in the Appendix for details). In the case of **scenario 8**, similar to previous scenarios, I assume there will be no strategic voting effects; voters will cast their ballots for the same lists as they did in the elections on October 15. **Scenario 9** anticipates that under altered conditions, individual parties will form two large coalitions, which will subsequently influence voter preferences.

---

[12] There are many other methods of proportional seat allocation (and their variants), but only these two have been used in the 21st century in Polish parliamentary elections. Given the subject of this article, there is no need to refer to others. A detailed discussion of the properties of these methods can be found in Balinski and Young (2010). An analysis of the progressiveness strength of both methods depending on the magnitude of the electoral district can be found in Haman (2017a).

Results

The distribution of mandates among party lists resulting from each scenario is detailed in Table 1. This table includes data for seven electoral committees: *Law and Justice* (Prawo i Sprawiedliwość), *Civic Coalition* (Koalicja Obywatelska), *Third Way* (Trzecia Droga), *New Left* (Nowa Lewica), *Confederation* (Konfederacja), *Nonpartisan Local Activists* (Bezpartyjni Samorządowcy), and *There is One Poland* (Polska Jest Jedna). These committees submitted candidate lists in all or nearly all 13 districts. I have excluded other committees that only presented their lists in some districts; these committees collectively received just 0.27% of the votes and would not have secured any mandates under any of the scenarios considered.

To evaluate the political implications of the results across various scenarios, it is essential to consider not only the outcomes for individual parties (electoral committees) but also their political relationships:

- **Law and Justice** (conservative) was the ruling party from 2015 to 2023.
- **Civic Coalition** (a coalition of liberal parties including Civic Platform and several smaller allies), **Third Way** (a coalition of two moderately conservative parties: "Poland 2050" and the Polish People's Party), and **New Left** (a coalition of leftist parties) expressed their intention prior to the elections to form a new liberal government to replace Law and Justice. After winning the elections, this coalition successfully formed the government; thus, their combined results are also reflected in the tables.
- **Confederation** (a conservative-nationalist coalition) was in opposition but was considered a potential coalition partner for Law and Justice if neither it nor the liberal coalition secured a majority after the elections.
- **Nonpartisan Local Activists** and **There is One Poland** were viewed as unlikely to play a significant role in national politics; however, they could act as spoilers by drawing votes away from other lists. Both committees were perceived as being closer to Law and Justice than to the liberal opposition parties.

The Sejm has a total of 460 seats available. An absolute majority of 431 mandates is necessary to appoint a government. Additionally, various "constitutional games" require qualified majorities: a 3/5 majority of votes (276 mandates) is needed to override a presidential veto on laws passed by Parliament, while a 2/3 majority (307 mandates) is required for constitutional amendments.

---

13   There is One Poland registered lists in 39 of 41 districts.

TABLE 1. Apportionments of Seats in the Sejm between Electoral Committees in the Elections on October 15, 2023: Actual Results and Results in Counterfactual Scenarios

	Actual results of elections	SCENARIO 1 Demographic adjustment as proposed by Electoral Commission		SCENARIO 2 Demographic adjustment based on "residents number" from census		SCENARIO 3 Oversea votes distributed between districts		SCENARIO 4 Seats allocation among districts based on actual turnout		SCENARIO 5 Sainte-Laguë method applied in 41 districts		SCENARIO 6 D'Hondt method applied at the national level – threshold 5%		SCENARIO 7 D'Hondt method applied at the national level – no thresholds		SCENARIO 8 100 districts in Sejm elections strategic effects ignored		SCENARIO 9 100 districts in Sejm elections strategic effects accounted	
	seats	seats	Δ	seats	Δ	seats	Δ	seats	Δ	seats	Δ	seats	Δ	seats	Δ	seats	Δ	seats	Δ
Law and Justice	194	196	2	193	-1	192	-2	191	-3	176	-18	169	-25	164	-30	220	26	242[a]	48
Civic Coalition	157	156	-1	159	2	157	0	159	2	145	-12	147	-10	143	-14	172	15	218[b]	61
Third Way	65	64	-1	65	0	66	1	66	1	71	6	69	4	67	2	60	-5	na	
New Left	26	28	2	27	1	26	0	29	3	37	11	41	15	40	14	8	-18	na	
Confederation	18	16	-2	16	-2	19	1	15	-3	31	13	34	16	33	15	0	-18	na	
Nonpart. Loc. Activists	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0	0	na	
There is One Poland	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	0	0	na	
Liberal opposition together[c]	248	248	0	251	3	249	1	254	6	253	5	257	9	250	+2	240	-8	218	-30

Note.

Δ = change (difference between number of seats in particular scenario and actual number of seats)

[a] *Seats for hypothetical coalition formed by Law and Justice*

[b] *Seats for hypothetical coalition formed by Civic Platform*

[c] *Civic Coalition, Third Way, New Left*

Source: own calculations based on data on election results published by the National Electoral Commission.

Detailed information regarding the distribution of seats among districts can be found in the tables in the Appendix. Table 2 outlines the number of mandates allocated in individual districts based on the current division (as retained in scenarios 3 and 5), as well as those derived from the assumptions made in scenarios 1, 2, and 4. Meanwhile, Table 3 illustrates a hypothetical distribution of mandates across 100 Sejm districts, mirroring those used for Senate elections (scenarios 8 and 9).

The allocation of mandates among lists was calculated based on data from the National Electoral Commission concerning the voting results from October 15, 2023.[14] With the exception of scenario 9, I assumed that there would be no new strategic effects; that is, voters would cast their ballots as they would under the current electoral system. Given the minimal changes involved, this assumption appears to be fully justified, particularly for scenarios 1–5, and it can also be defended for scenario 6. The situation in scenario 7 is likely more contentious: removing the legal threshold could significantly influence the strategies of both parties and voters, but in this article, I do not attempt to model that effect.

The absence of strategic effects in scenario 8 is even more questionable. For this reason, I also present results for scenario 9, where such effects are modeled. Dividing the country into 100 districts and consequently reducing the average district size to 4.60 mandates (down from the current 11.22) could serve as a strong incentive for political integration. I anticipate that this integration would coalesce around the two dominant parties: Civic Platform and Law and Justice. Even if this integration takes the form of a coalition list during elections, voting on a joint list may require supporters of smaller parties to compromise their own views significantly. As a result, support for such a coalition cannot simply be expected to equal the combined support each party would receive if running separately. Some supporters of smaller parties might choose not to vote at all or might opt for a competing list; for example, some supporters of the New Left may believe that only a coalition centered around Law and Justice offers a viable social program, while some supporters of Third Way might view Law and Justice as their best option for safeguarding "traditional values."

In my model, I assumed support patterns for two hypothetical dominant lists:

- Coalition around Civic Platform would receive:
  › All (100%) of original Civic Coalition voters from October 15, 2023
  › Half (50%) of original Third Way and New Left voters
- Coalition around Law and Justice would receive:
  › All (100%) of original Law and Justice voters
  › Half (50%) of the original Confederation, Nonpartisan Local Activists, and There is One Poland voters
  › 10% of original Third Way and New Left voters

---

[14] The National Electoral Commission provides comprehensive electoral data at national, electoral district, and polling districts levels, along with detailed information about the location of polling stations, number of votes cast for each list, number of residents end of eligible voters in voting district. The data allows for a clear calculation of the hypothetical elections results (distribution of mandates) for any assumed structure of electoral districts, under various variants of the electoral formula, or with different numbers of mandates to be distributed in individual districts. The calculations leading to the determination of seat allocations obtained under various scenarios were conducted using the SPSS package; the syntax used for calculating seat distributions according to the D'Hondt and Sainte-Laguë methods was authored by me.

- 40% of original Third Way and Left voters and 50% of original Confederation, Non-partisan Local Government Activists, and There is One Poland voters would either not participate in voting or cast votes for minor parties unlikely to gain parliamentary seats.

The model I considered regarding "strategic effects" in applying the variant with 100 Sejm districts is largely arbitrary; I do not claim that voters would behave exactly this way. Rather, I indicated it as one possibility.

Discussion of the Political Consequences of Reforms

## Political Consequences of Demographic Adjustment (Scenarios 1 and 2)

The failure to implement demographic adjustments to electoral districts, which were both mandated by the Electoral Code and recommended by the National Electoral Commission, cost the Law and Justice the loss of two seats. In **scenario 1** (demographic adjustment as National Electoral Commission expected), Law and Justice would receive 196 mandates instead of the actual 194. The New Left would also gain two mandates, while Confederation would lose two, and both Civic Coalition and Third Way would lose one each. The total number of seats held by the liberal opposition coalition would have remained at 248, unchanged from the actual election results of October 15, 2023.

FIGURE 1. Comparison of the Actual Distribution of Seats with the Distribution Resulting from the Adoption of Scenario 1
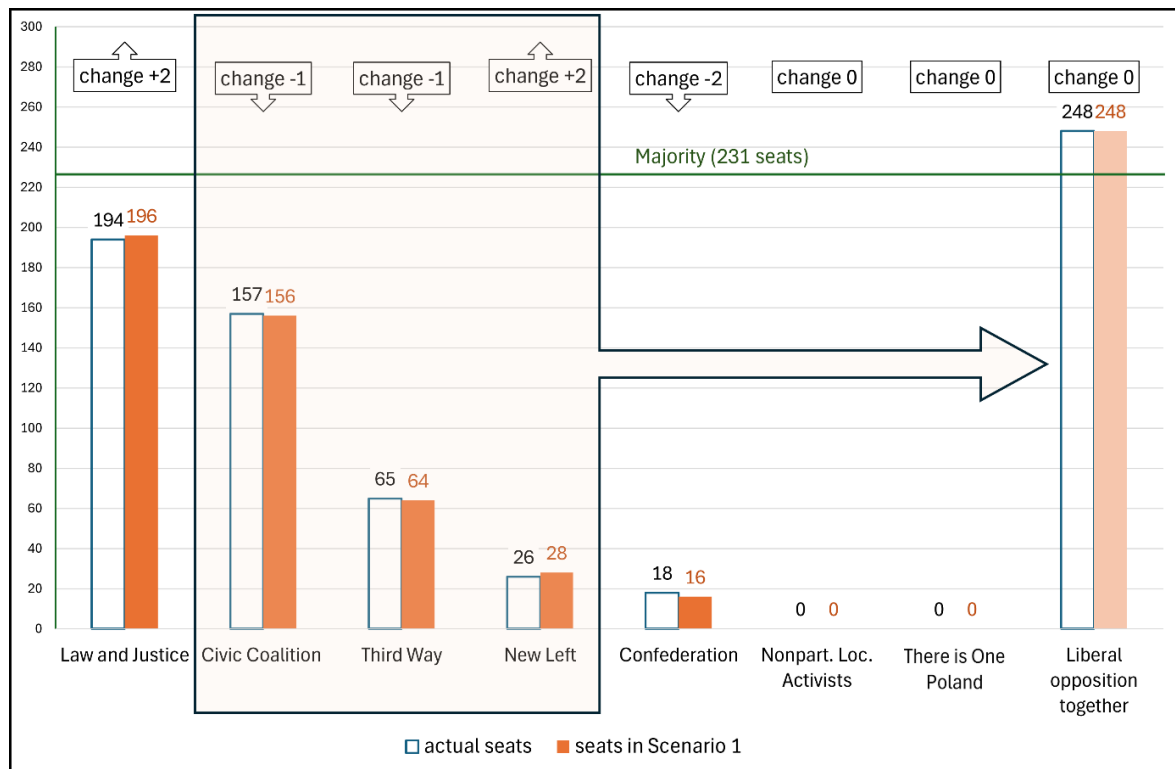
Source: own elaboration.

FIGURE 2. Comparison of the Actual Distribution of Seats with the Distribution Resulting from the Adoption of Scenario 2
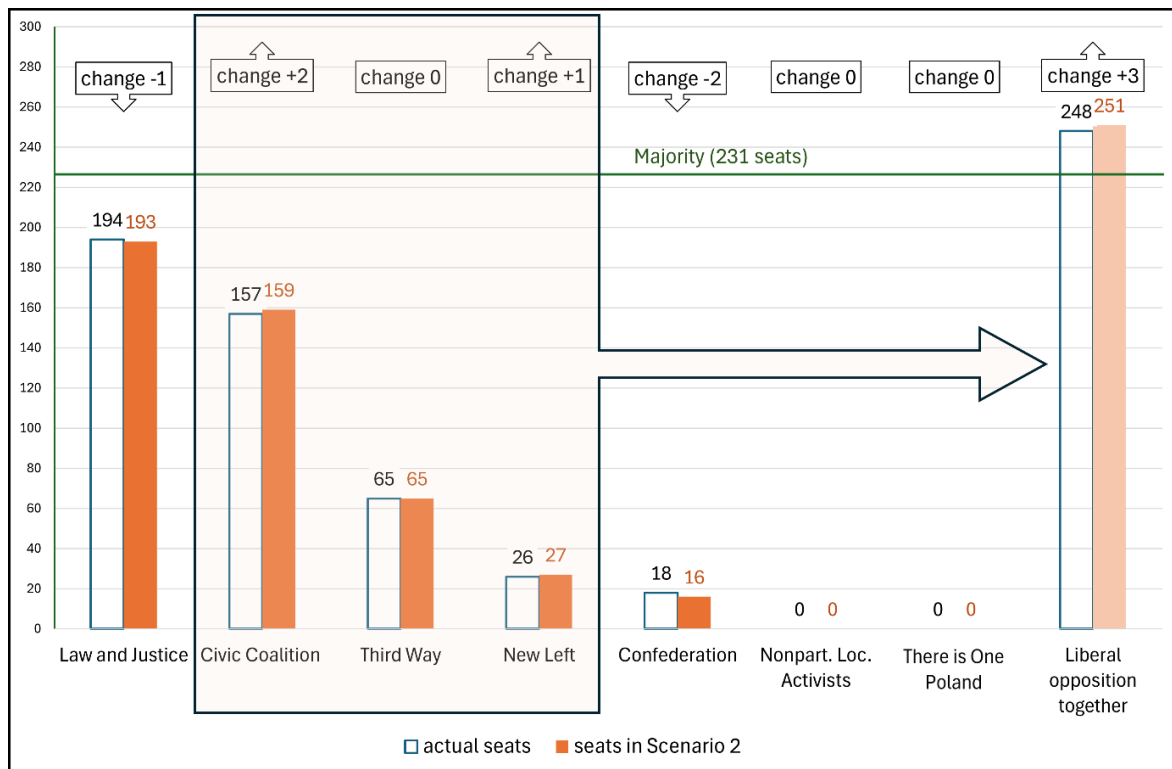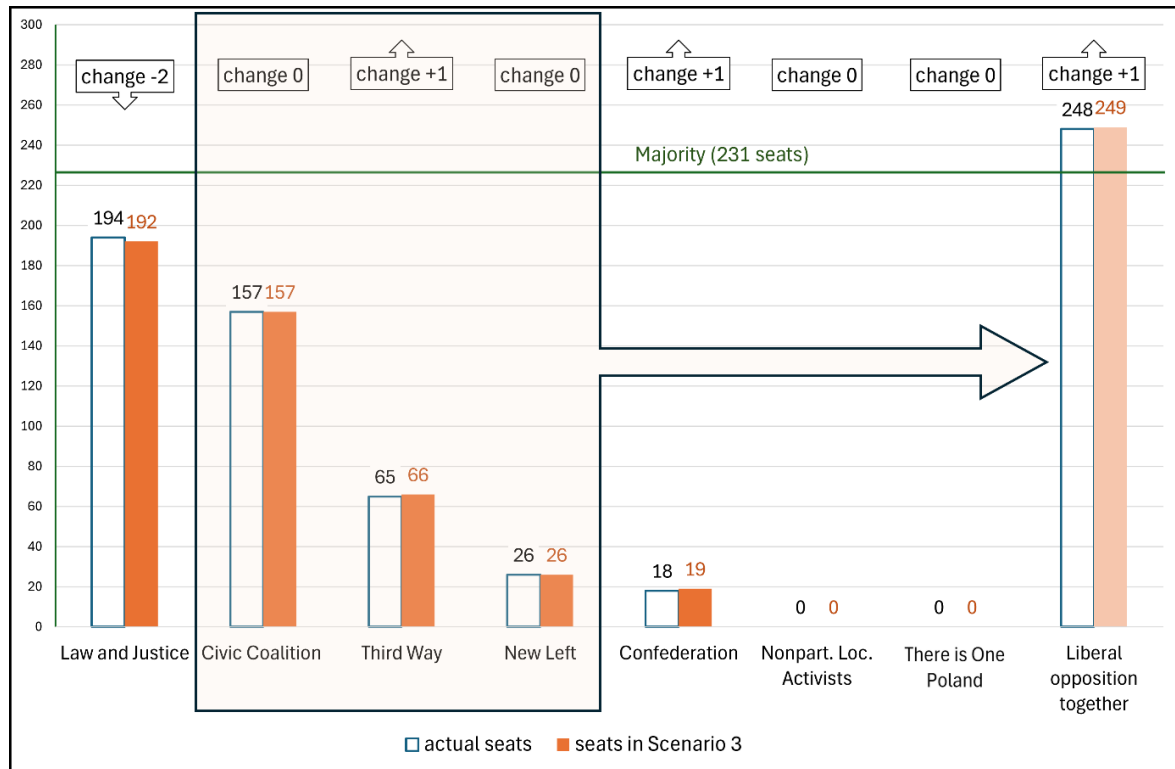

Source: own elaboration.

However, if the demographic adjustment were based on census data instead of registry data (Scenario 2), the Civic Coalition would benefit from two additional mandates, and the New Left would acquire one. This shift would come at the expense of Law and Justice, which would lose one mandate, and Confederation (losing two mandates). Collectively, this would result in a gain of three mandates for the liberal opposition. The discrepancy between the actual number of residents and those recorded in registries is most pronounced in major cities, where Law and Justice consistently performs worse than in other areas of the country, while the Civic Coalition and the Left achieve better results.

Political Consequences of Changing the Overseas Vote Treatment (Scenarios 3 and 4)

When overseas votes are distributed proportionally across all electoral districts based on their size (Scenario 3), the Law and Justice party loses two parliamentary seats to Third Way and Confederation, giving the liberal opposition a net gain of one seat.

FIGURE 3. Comparison of the Actual Distribution of Seats with the Distribution Resulting from the Adoption of Scenario 3
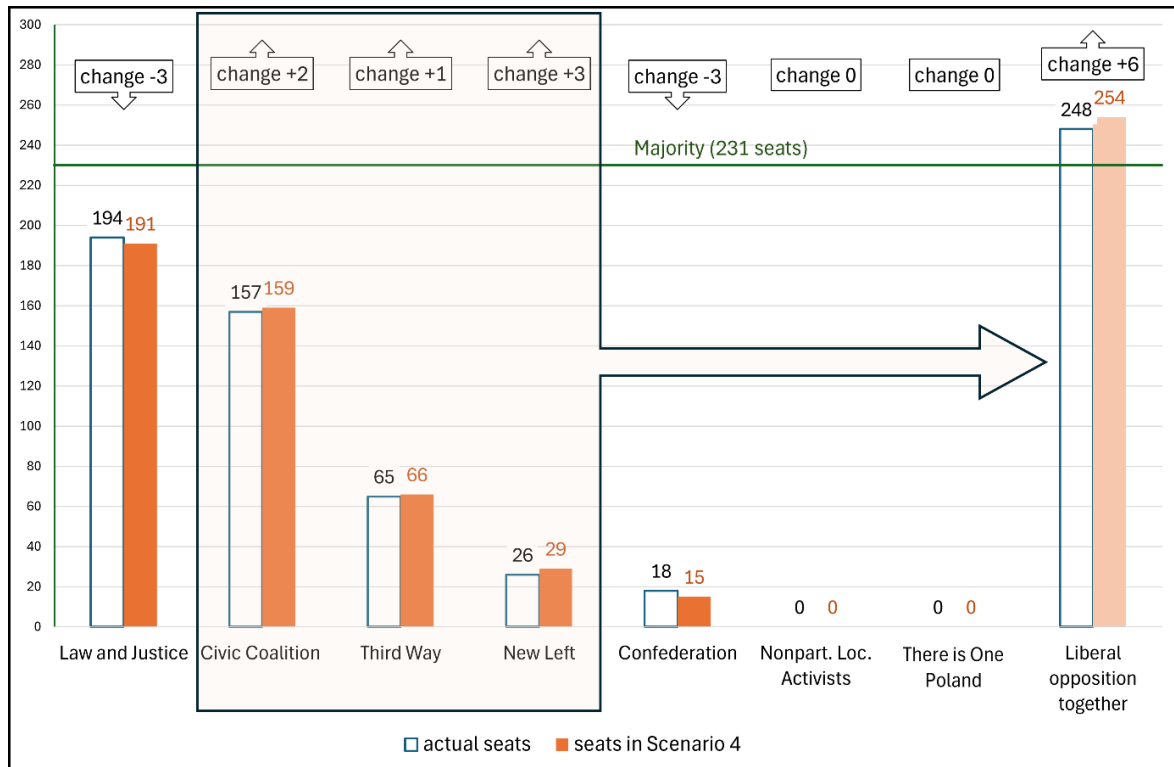

Source: own elaboration.

In Scenario 4, dividing seats among electoral districts based on the number of votes cast addresses issues with overseas voting while eliminating the lack of demographic adjustment and rewarding districts with higher turnout. The combined impact of these factors is a shift of six mandates: Law and Justice loses three, Confederation loses three, while the New Left gains three, Civic Coalition gains two, and Third Way gains one. This would result in a total shift of six seats toward the liberal opposition.

The current system, which combines overseas votes with Warsaw's district, diminishes the voting power of both Warsaw residents and overseas voters. In 2023, the political preferences of these two voter groups were notably similar: Both groups tend to favor liberal opposition parties and show less support for Law and Justice.[15] This explains the direction of the political consequences of proposed regulations concerning overseas votes. However, that the overall impact is relatively modest. Scenario 4's stronger effect is partly due to its consideration of turnout rates, which tend to be higher in large cities where liberal opposition typically performs better. Noteworthy, adding a mandate in a specific district does not necessarily mean it will be added to the list of the local winner, even though it has the best chance for it. Individual parties may gain ground in some districts while losing in others, resulting in a net effect of only a few mandates being shifted.

---

[15]   Vote share for Law and Justice: 22.1% in Warsaw, 16.3% abroad, among all voters 35.4%. Vote share for the liberal opposition combined: 69.0% in Warsaw, 71.9% abroad, among all voters 53.7%.

FIGURE 4. Comparison of the Actual Distribution of Seats with the Distribution Resulting from the Adoption of Scenario 4
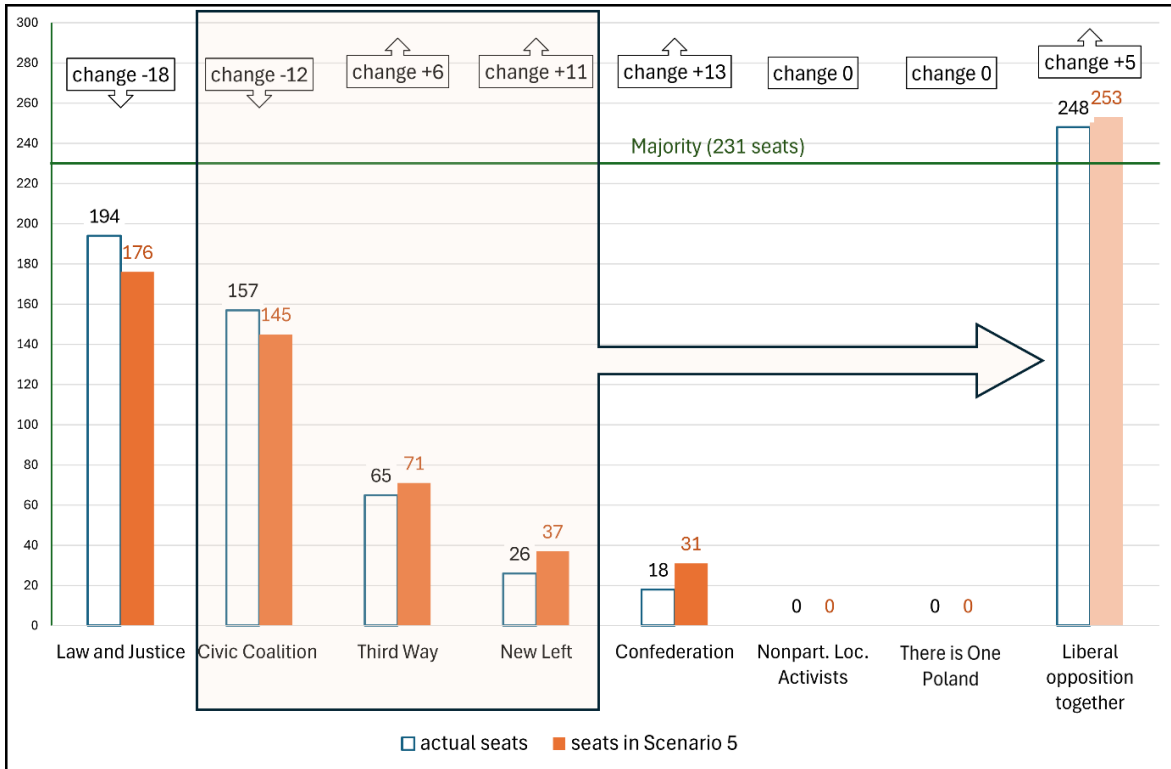

Source: own elaboration.

Political Consequences of Changing Progressivity in Proportional Distribution (Scenarios 5–9)

While previous scenarios led to only minor changes in election outcomes, manipulating the progressivity strength of proportional mandate distribution would result in significantly larger shifts.

When the allocation method was changed from D'Hondt to Sainte-Laguë while maintaining the existing district structure (Scenario 5), smaller political parties gained considerable advantages. The Confederation secured an additional 13 seats, while the Left gained 11 seats. The Third Way increased its representation by six seats. Conversely, the larger parties suffered losses, with Law and Justice losing 18 seats and the Civic Coalition declining by 12 seats. Despite these shifts, the liberal opposition's total seat gain was relatively modest, increasing by only five seats overall.

FIGURE 5. Comparison of the Actual Distribution of Seats with the Distribution Resulting from the Adoption of Scenario 5
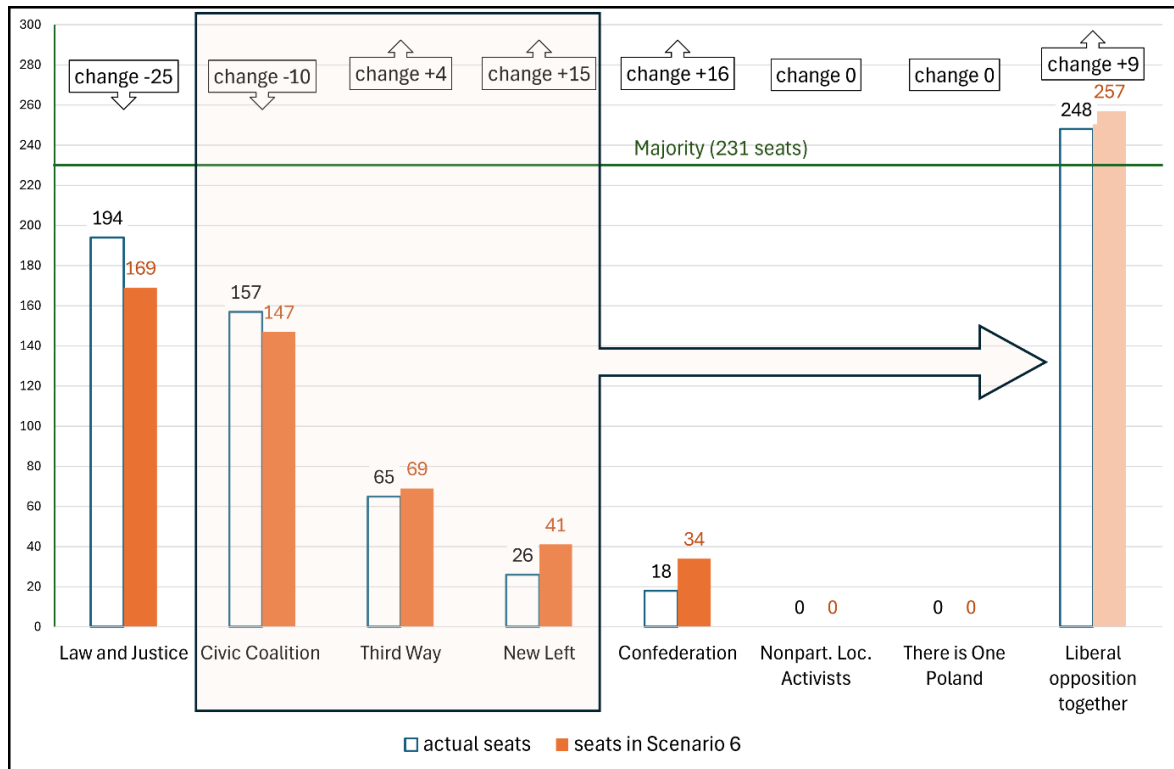

Source: own elaboration.

The distribution of parliamentary seats at the national level, rather than by electoral districts, creates more dramatic changes in seat allocation. With a 5% electoral threshold applied (Scenario 6), Law and Justice would lose 25 seats, while Civic Coalition's would lose ten seats. Smaller parties would see substantial gains. Confederation would receive 16 additional seats, New Left would gain 15 seats, and Third Way would acquire four more seats. Under this scenario, the combined liberal opposition would control 257 seats – nine seats more than the actual election results.

Abolition of the threshold (Scenario 7) would allow small committees to secure seats. Nonpartisan Local Activist would gain eight seats and There is One Poland – five seats at the expense of other parties. This would result in a total of 250 mandates for the liberal opposition. However, this projection should be interpreted cautiously, as it does not account for the probable emergence of strategic effects not included in the model.

FIGURE 6. Comparison of the Actual Distribution of Seats with the Distribution Resulting from the Adoption of Scenario 6

Source: own elaboration.

FIGURE 7. Comparison of the Actual Distribution of Seats with the Distribution Resulting from the Adoption of Scenario 7
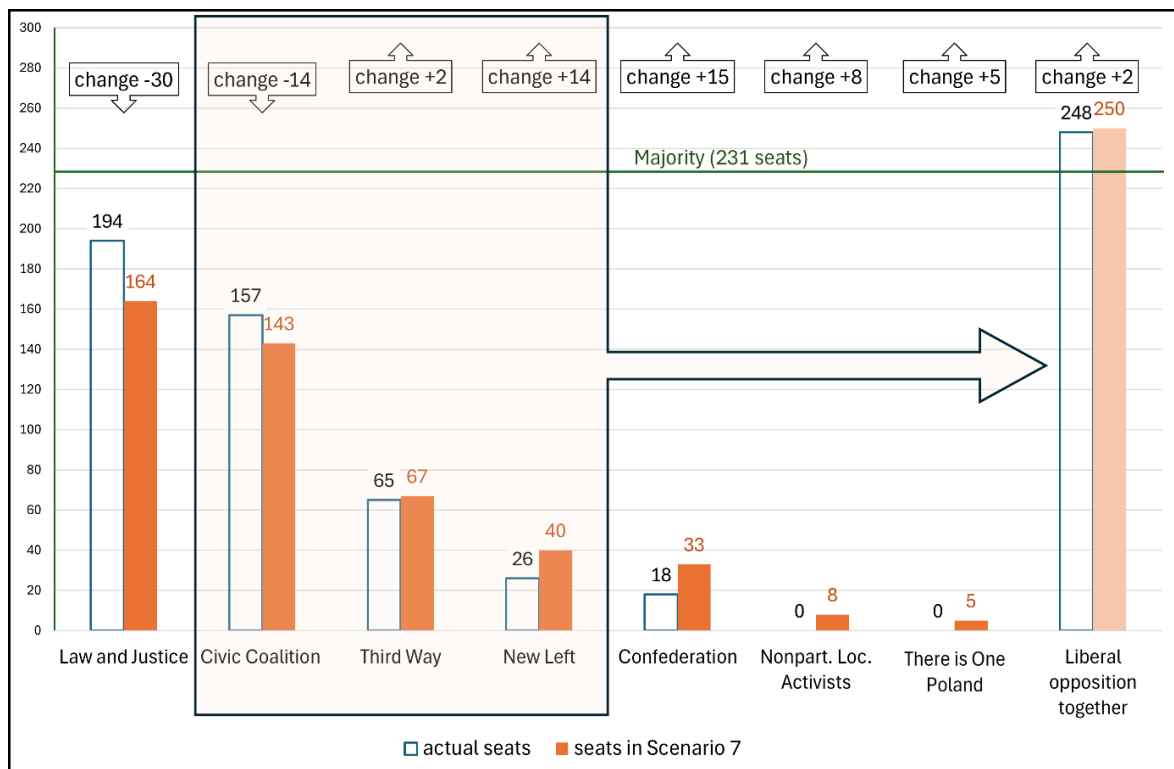
Source: own elaboration.

A hypothetical increase to 100 electoral districts, assuming no strategic voting changes (Scenario 8) would reverse previous trends. Increasing the number of districts means reducing their average magnitude, creating an electoral system that strongly favors the largest political parties. In this scenario, Law and Justice benefits with an increase of 26 mandates and Civic Coalition by 15. Confederation is eliminated from Parliament entirely, while Left loses over two-thirds of its mandates (-18), with Third Way losing only five. The total for liberal opposition drops to 240 mandates, still providing a safe majority. This result may be surprising: we are discussing a scenario that assumes a revolutionary change in the Polish electoral system; this electoral reform has been discussed as a potential strategy for Law and Justice to secure long-term control. The analysis suggests it would not achieve this intended effect.
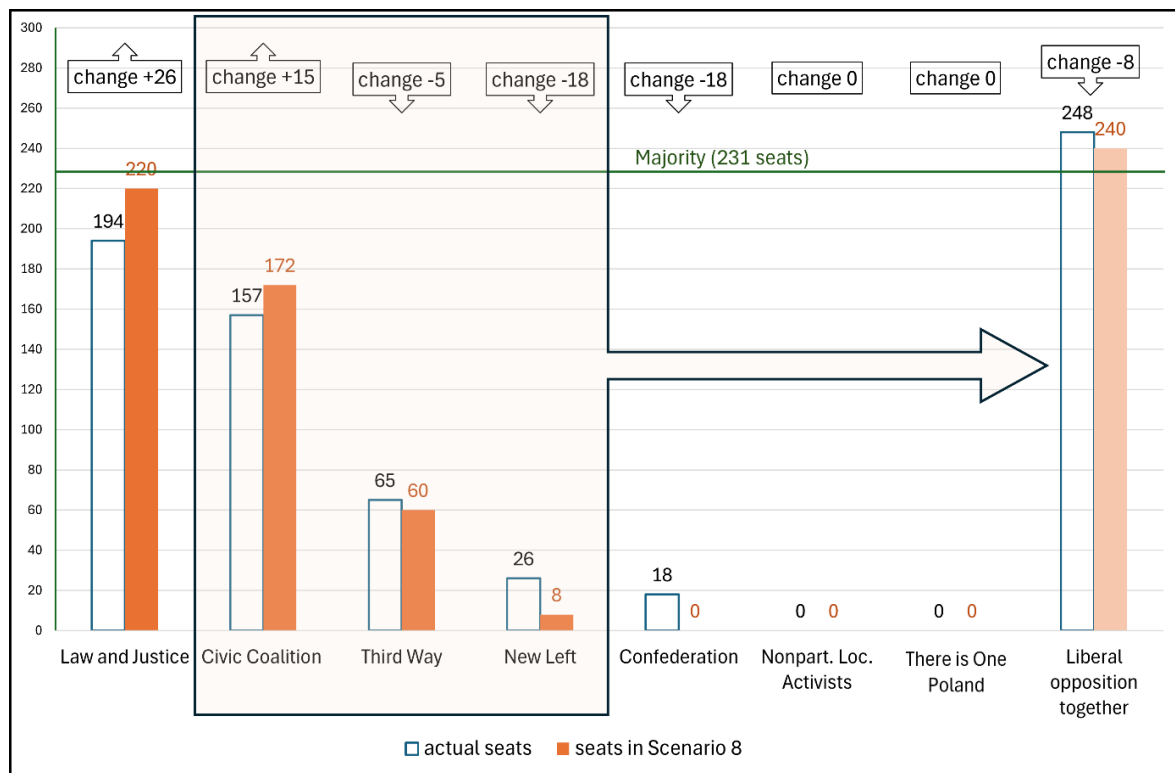
FIGURE 8. Comparison of the Actual Distribution of Seats with the Distribution Resulting from the Adoption of Scenario 8

Source: own elaboration.

As observed, scenarios 5, 6, 7, and 8 resulted in significant changes in the number of mandates for individual parties, with scenarios 5, 6, and 7 favoring smaller parties and scenario 8 favoring larger ones. However, regarding the relationship between Law and Justice and the liberal opposition, these changes would have minimal political consequences. Any losses or gains experienced by the Civic Coalition in these scenarios would be offset by corresponding gains or losses among its smaller allies, resulting in a moderate net change.

When considering potential strategic effects and forming coalitions around Law and Justice and Civic Platform the outcomes differ fundamentally. The additional benefits for Civic Platform are considerably smaller than those for Law and Justice. This marks the only sce-

nario in which Law and Justice secure a majority in the Sejm, achieving 242 mandates for its coalition compared to 218 for the Civic Platform's coalition.

FIGURE 9. Comparison of the Actual Distribution of Seats with the Distribution Resulting from the Adoption of Scenario 9

Source: own elaboration.
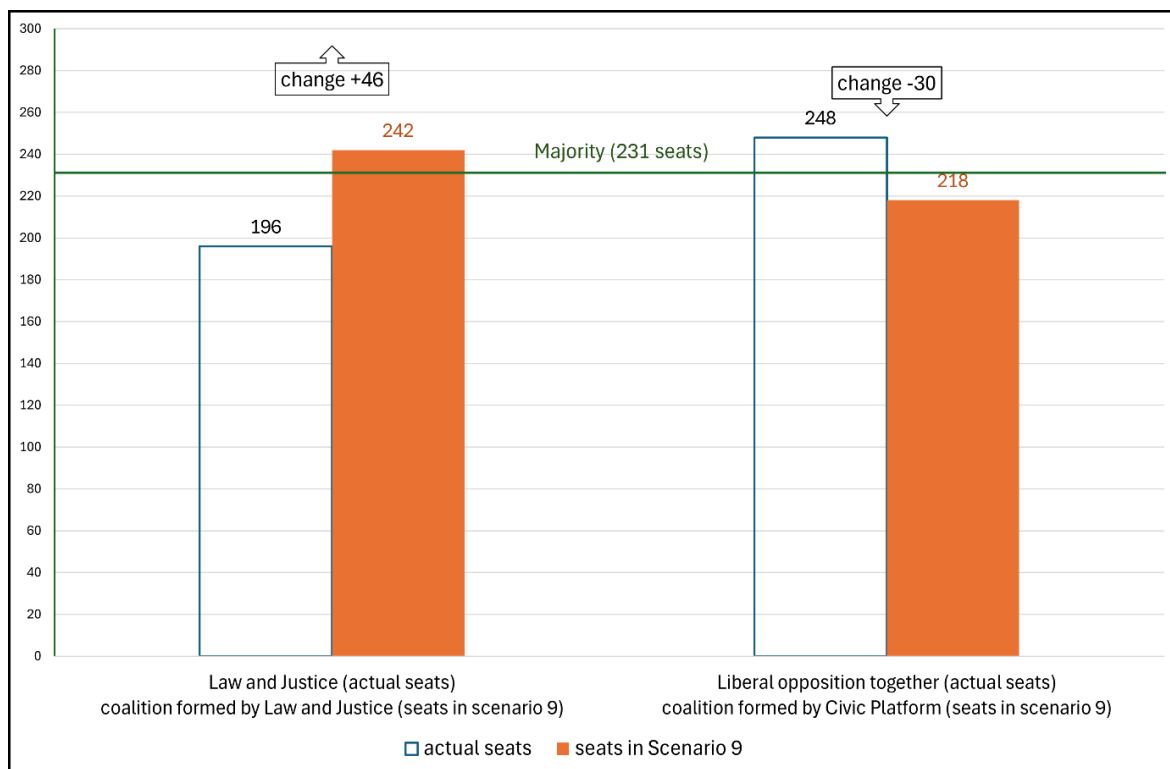
The final variant discussed is the only one that offers a clear advantage – specifically, a majority – to the Law and Justice list. In the proposed model of strategic behavior, the liberal opposition coalition incurs greater losses and narrowly loses in terms of votes to Law and Justice; the Civic Platform list receives 49.5% of the votes, while Law and Justice secures 50.5%. It can certainly be argued that this model is exceptionally "pessimistic" from the perspective of the liberal opposition, and this assertion is likely valid. Had slightly less favorable coefficients for Law and Justice been assumed, the outcome could have been different.[16] Nonetheless, the direction of changes in vote distribution as depicted in the model is well-justified, although predicting the magnitude of these changes remains challenging. The result presented is uncertain, but it cannot be entirely dismissed either.

---

[16] I did not perform a comprehensive sensitivity analysis on the parameters of the "strategic effect" model, which includes six independent variables that would need to be evaluated. However, in a simplified analysis focusing on just one parameter – specifically, the voting propensity for the coalition led by Civic Platform, which I assumed to be 0.5 for supporters of the New Left and Third Way – I arrived at an interesting conclusion. If we hold the other parameters constant, the Civic Platform coalition would match the Law and Justice coalition in terms of mandates if the percentage of New Left and Third Way supporters willing to vote for the coalition list increased to 0.667.

Conclusions

Yes, how votes are counted matters. Each of the scenarios examined resulted in different election outcomes (in terms of seat distribution) despite assuming the same voting results (vote distribution) in all but one scenario. However, aside from the last scenario analyzed, the variations compared to the actual election results from October 15, 2023 were quantitatively minor and would likely have minimal or perhaps no significant political consequences. In scenarios 1 through 7, the coalition of the liberal opposition (Civic Coalition, Third Way, New Left) secures a majority of seats with a comfortable margin but fails to achieve a qualified majority needed to override a presidential veto (three-fifths) or a constitutional majority (two-thirds of all seats). Furthermore, in every scenario, this coalition remains a "minimal winning coalition," meaning that all partners are essential for maintaining its majority status. In this context, whether a particular list gains a few additional seats or loses some becomes largely inconsequential. In scenario 8, while the overall outcome remains similar (a victory for the liberal opposition), the Civic Coalition and Third Way together hold the majority. Here, the Left becomes an "insignificant player." Given that this is a very narrow majority (232 seats), it is likely that the Left would be invited to join the coalition, though its negotiating power would undoubtedly be diminished.

Several patterns emerge regarding the less dramatic shifts in mandates predicted across individual scenarios.

All scenarios considered, except for scenarios 8 and 9, showed that liberal opposition would achieve results at least as favorable as their actual election outcomes. According to the Electoral Code provisions (scenario 1), the demographic adjustment would be politically neutral in essence. Law and Justice would gain two seats at the expense of Confederation. However, using census data for demographic adjustments (scenario 2) would favor districts with large urban populations where Law and Justice has less support. Additionally, overseas voters – who tend to support opposition parties – would benefit from changes in the overseas voting system outlined in scenarios 3 and 4. Scenarios 5, 6, and 7 assumed a weakening of the progressiveness in seat distribution and are also advantageous for the opposition. Law and Justice, as the party with the highest support, would lose the most from such changes since it benefits significantly from strong progressiveness in Poland's electoral system. The Civic Coalition would also incur losses but to a lesser extent, while smaller parties would gain.

There exists a paradox. While the current electoral system appears generally favorable to Law and Justice (albeit marginally), this is due to features that predate their rise to power in 2015. Law and Justice can be criticized for not implementing demographic adjustments proposed by the National Electoral Commission during its two terms with parliamentary majorities – but this failure cost them two mandates.

Overall, the balance of political forces in the Sejm following the 2023 elections has proven quite resistant to potential modifications within individual elements of the electoral system. This resistance results partly from the limited scope of changes assumed in scenarios 1–5. It is also significant that the actual winner of these elections – the coalition of liberal opposition – comprises parties with diverse characteristics. This coalition includes both large and small parties; each party enjoys support from various social groups, which translates into geo-

graphical diversity. Consequently, factors that negatively impact one member's situation are often counterbalanced by benefits for another. This dynamic was evident even in scenarios 6, 7, and 8, which proposed more substantial changes to Poland's electoral system yet did not yield qualitatively significant political consequences.

However, just because these proposed modifications to the electoral system would lead to relatively minor shifts in mandates does not mean they lack significance. For instance, shifting one or two mandates in the Sejm during the term from 2015 to 2019 could have resulted in Prime Minister Mateusz Morawiecki's government losing its majority. Similarly, if Prime Minister Hanna Suchocka's coalition had just one more mandate, her dismissal and the dissolution of the Sejm in 1993 could have been avoided. These two examples should suffice. Besides, who knows what will be the composition of parliamentary clubs at the end of the current term? While "how votes are cast" is crucial, "how they are counted" also matters. This significance should neither be overstated nor underestimated.

References

Books and Articles

Cześnik, M., Flis, J., Gendźwiłł, A., Haman, J., Materska-Sosnowska, A., Rakowska-Trela, A., ... Zbieranek, J. (2022). *Reguły, zamiary, praktyki. Prawo wyborcze i wybory 2017–2020.* Wydawnictwo Naukowe Scholar i Fundacja im. Stefana Batorego

Duverger, M. (1959). *Political Parties: Their Organization and Activity in the Modern State*. Wiley.

Evci, U., & Kaminski, M. (2020). Strzał w stopę. Niezamierzone konsekwencje polityczne manipulacji wyborczej w tureckich wyborach parlamentarnych w 2018 roku. *Decyzje*, *34*, 49–65. doi: 10.7206/DEC.1733-0092.146

Evci, U., & Kaminski, M. M. (2021). Shot in the foot: Unintended political consequences of electoral engineering in the Turkish parliamentary elections in 2018. *Turkish Studies*, *22*(3), 481–494. doi: 10.1080/14683849.2020.1843443

Haman, J. (2002). Podział mandatów pomiędzy okręgi wyborcze w świetle teorii sprawiedliwego podziału dóbr. *Przegląd Sejmowy*, *48*(1), 9–34.

Haman, J. (2017a). Progresywna proporcjonalność jako cecha systemu wyborczego. *Decyzje*, 27.

Haman, J. (2017b). The concept of degressive and progressive proportionality and its normative and descriptive applications. *Studies in Logic, Grammar and Rhetoric* 50 (63). doi: 10.1515/slgr-2017-0019.

Haman, J. (2022a). *Podział mandatów między okręgi wyborcze w wyborach do Sejmu Najważniejsze wnioski i rekomendacje*. Warszawa: Fundacja im. Stefana Batorego.

Haman, J. (2022b). Potencjalne konsekwencje dla podziału mandatów pomiędzy okręgi wyborcze w wyborach powszechnych. In: M. Turlejski, A. Abramowska-Kmon, D. Batorski, J. Salamońska, K. Rakocy, M. Wojdat, ... P. Marczewski, *Czy wiemy, ilu nas jest?* (ss. 70–80). Fundacja im. Stefana Batorego i Unia Metropolii Polskich.

Jay, A. (2010). *Lend me your ears : Oxford dictionary of political quotations*. Oxford: Oxford University Press.

Kamiński, M. M. (1999). How communism could have been saved: Formal analysis of electoral bargaining in Poland in 1989. *Public Choice*, *98*(1–2), 83–109. doi: 10.1023/A:1018343527571.

Kaminski, M. M. (2001). Coalitional Stability of Multi-Party Systems. *American Journal of Political Science*, *45*(2), 294–312. doi: 10.2307/2669342.

Kaminski, M. M., Lissowski, G. & Swistak, P. (1998) The "revival of communism" or the effect of institutions?: The 1993 Polish parliamentary elections. *Public Choice, 97*(4), 429–449. doi: 10.1023/A:1005042010270.

Turlejski, M., Abramowska-Kmon, A., Batorski, D., Salamońska, J., Rakocy, K., Wojdat, M., … Marczewski, P. (2023). *Czy wiemy, ile nas jest? O potrzebie reformy sposobu pomiaru liczebności i struktury populacji*. Fundacja im. Stefana Batorego i Unia Metropolii Polskich.

Internet sources:

100 okręgów, czyli wyborczy Polski Ład, *100 okręgów, czyli wyborczy Polski Ład | Obywatele.News*. Available from: https://obywatele.news/100-okregow-czyli-wyborczy-polski-lad/ (accessed: 28.11.2023).

Bliżej do zmian w ordynacji. Im więcej okręgów, tym lepiej – tylko dla kogo? Available from: https://www.gazetaprawna.pl/wiadomosci/kraj/artykuly/8515960,zmiany-w-ordynacji-sejm-kaczynski-pis-mandaty-sceptycy-prezydent.html (accessed: 28.11.2023).

PiS szykuje gorącą jesień. Available from: https://www.rp.pl/polityka/art8871751-pis-szykuje-goraca-jesien (accessed: 28.11.2023).

Datasets

National Electoral Commission: October 15, 2023 election results data on the level of polling districts. Available from: https://wybory.gov.pl/sejmsenat2023/data/csv/wyniki_gl_na_listy_po_obwodach_sejm_xlsx.zip (accessed: 20.10.2023).

Legal Documents

Kodeks Wyborczy (*Electoral Code*), Dziennik Ustaw 2023, poz. 2408.

Letter from the Chairman of the National Electoral Commission, Sylwester Marciniak, to the Speaker of the Sejm of the Republic of Poland, Elżbieta Witek, dated October 21, 2022, reference number ZPOW.520.1.2022. Available from: https://pkw.gov.pl/uploaded_files/1666677967_zpow52012022.pdf (accessed: 28.11.2023).

Obwieszczenie Ministra Spraw Wewnętrznych i Administracji z dnia 27 lipca 2022 r. w sprawie ogłoszenia jednolitego tekstu rozporządzenia Ministra Spraw Wewnętrznych i Administracji w sprawie zapewnienia Państwowej Komisji Wyborczej wykonywania zadań związanych z nadzorem nad prowadzeniem rejestru wyborców i sporządzaniem spisów wyborców (*Announcement of the Minister of Internal Affairs and Administration of 27 July 2022 on the announcement of the uniform text of the regulation of the Minister of Internal Affairs and Administration on ensuring that the National Electoral Commission performs tasks related to the supervision of maintaining the voter register and drawing up voter lists*), Dziennik Ustaw 2022, poz. 1703.

Appendixes – Apportionment of Seats among Electoral Districts

TABLE A1. Variants of the Division of 460 Seats between 41 Electoral Districts to the Sejm

District number	Main town	Actual (as in the Electoral Code) (Scenarios 3 and 5)	With demographic adjustment as proposed by the National Electoral Commissiona (Scenario 1)		With demographic adjustment based on the census datab (Scenario 2)		Mandates distribution based on the actual turnoutc (Scenario 4)	
		seats	seats	change	seats	change	seats	change
1	Legnica	12	11	-1	11	-1	11	-1
2	Wałbrzych	8	7	-1	8	0	7	-1
3	Wrocław	14	15	1	16	2	16	2
4	Bydgoszcz	12	12	0	12	0	11	-1
5	Toruń	13	12	-1	12	-1	12	-1
6	Lublin	15	14	-1	14	-1	14	-1
7	Chełm	12	11	-1	11	-1	10	-2
8	Zielona Góra	12	12	0	12	0	11	-1
9	Łódź	10	9	-1	10	0	10	0
10	Piotrków Trybunalski	9	9	0	9	0	9	0
11	Sieradz	12	12	0	11	-1	11	-1
12	Kraków I	8	8	0	8	0	8	0
13	Kraków II	14	15	1	15	1	16	2
14	Nowy Sącz	10	10	0	9	-1	9	-1
15	Tarnów	9	9	0	9	0	9	0
16	Płock	10	10	0	10	0	9	-1
17	Radom	9	9	0	8	-1	8	-1
18	Siedlce	12	12	0	12	0	12	0
19	Warszawa	20	21	1	23	3	36	16
20	Warszawa (suburbs)	12	14	2	15	3	15	3
21	Opole	12	12	0	11	-1	10	-2
22	Krosno	11	11	0	10	-1	9	-2
23	Rzeszów	15	16	1	15	0	14	-1
24	Białystok	14	14	0	14	0	13	-1
25	Gdańsk	12	13	1	13	1	13	1
26	Gdynia	14	15	1	15	1	15	1
27	Bielsko-Biała	9	9	0	9	0	9	0
28	Częstochowa	7	7	0	7	0	7	0
29	Gliwice	9	9	0	9	0	8	-1
30	Rybnik	9	9	0	9	0	8	-1
31	Katowice	12	11	-1	12	0	11	-1
32	Sosnowiec	9	8	-1	8	-1	8	-1
33	Kielce	16	15	-1	14	-2	14	-2
34	Elbląg	8	7	-1	7	-1	7	-1
35	Olsztyn	10	10	0	9	-1	8	-2
36	Kalisz	12	12	0	12	0	12	0
37	Konin	9	10	1	9	0	9	0
38	Piła	9	10	1	9	0	9	0
39	Poznań	10	11	1	12	2	13	3
40	Koszalin	8	7	-1	8	0	7	-1
41	Szczecin	12	12	0	13	1	12	0

Sources: a National Electoral Commission, b(Haman, 2022b, pp. 78–80), c own calculations.

TABLE A2. Apportionment of 460 Seats among 100 Districts (Numbering and Boundaries as for the Senate Districts in 2023 election), Applied in Scenarios 8 and 9

District number and localization of Electoral Commission	seats	District number and localization of Electoral Commission	seats	District number and localization of Electoral Commission	seats
1 Legnica	3	36 Nowy Sącz	5	71 Katowice	3
2 Legnica	3	37 Nowy Sącz	5	72 Bielsko-Biała	5
3 Legnica	5	38 Płock	6	73 Bielsko-Biała	4
4 Wałbrzych	4	39 Płock	4	74 Katowice	5
5 Wałbrzych	4	40 Warszawa	7	75 Katowice	3
6 Wrocław	8	41 Warszawa	7	76 Katowice	5
7 Wrocław	3	42 Warszawa	5	77 Katowice	3
8 Wrocław	4	43 Warszawa	6	78 Bielsko-Biała	5
9 Bydgoszcz	7	44 Warszawa	5	79 Bielsko-Biała	4
10 Bydgoszcz	5	45 Warszawa	5	80 Katowice	3
11 Toruń	4	46 Siedlce	5	81 Kielce	5
12 Toruń	4	47 Siedlce	4	82 Kielce	5
13 Toruń	4	48 Siedlce	3	83 Kielce	5
14 Lublin	5	49 Radom	3	84 Elbląg	4
15 Lublin	5	50 Radom	6	85 Elbląg	4
16 Lublin	4	51 Opole	5	86 Olsztyn	5
17 Chełm	3	52 Opole	3	87 Olsztyn	5
18 Chełm	3	53 Opole	4	88 Piła	5
19 Chełm	5	54 Rzeszów	4	89 Piła	5
20 Zielona Góra	4	55 Rzeszów	6	90 Poznań	5
21 Zielona Góra	4	56 Rzeszów	6	91 Poznań	6
22 Zielona Góra	3	57 Krosno	4	92 Konin	5
23 Łódź	4	58 Krosno	7	93 Konin	5
24 Łódź	5	59 Białystok	6	94 Kalisz	4
25 Sieradz	3	60 Białystok	6	95 Kalisz	4
26 Sieradz	4	61 Białystok	2	96 Kalisz	4
27 Sieradz	4	62 Słupsk	6	97 Szczecin	5
28 Piotrków Trybunalski	5	63 Słupsk	6	98 Szczecin	7
29 Piotrków Trybunalski	4	64 Słupsk	4	99 Koszalin	4
30 Kraków	8	65 Gdańsk	6	100 Koszalin	3
31 Kraków	6	66 Gdańsk	4		
32 Kraków	4	67 Gdańsk	2		
33 Kraków	5	68 Częstochowa	5		
34 Tarnów	5	69 Częstochowa	2		
35 Tarnów	5	70 Katowice	5		

Source: own calculations based on data on the number of inhabitants provided by the National Electoral Commission.