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Mixed electoral systems: The best of both worlds or the worst of both?

Jeremiasz Salamon¹ · Marek M. Kaminski² · Jarosław Flis³

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Abstract

Mixed electoral systems combine majoritarian and proportional rules within a single institutional framework, promising what Shugart and Wattenberg (2001) called "the best of both worlds": local accountability alongside representational fairness. This article surveys the family of mixed systems—parallel, compensatory, proportional, and combined—and examines whether their constitutional promise has been fulfilled. Simulations of seat allocation under alternative mixed designs demonstrate that these systems generate markedly different seat distributions, undermining any unified claim about their representational properties. A systematic analysis of the paradoxes that have emerged over a quarter century of practice—excessive complexity, decoy parties, manipulative coalition coordination, uncontrolled parliamentary growth, and "zombie" legislators—reveals that strategic actors routinely exploit the gap between constitutional aspiration and institutional detail. We conclude by assessing how variation in the constitutional entrenchment of mixed systems shapes both the scope for manipulation and the capacity for reform. A Glossary of key concepts is included as an Appendix.

Keywords Mixed electoral systems · Constitutional design · Proportional representation · Compensatory mechanisms · Electoral manipulation · Overhang seats

JEL Classification D71 · D72 · H11

1 Introduction

Electoral systems are a core component of constitutional rules governing the allocation of political authority in democracies. Since the debates of the American Founding Fathers preceding the adoption of the Constitution in 1789 (Balinski &

Extended author information available on the last page of the article

Young, 2001; Dahl, 2003) and the introduction of proportional representation (PR) in Belgium in 1899 (Emmenegger & Walter, 2019), two principal electoral models have emerged. Majoritarian systems elect representatives in single-member districts (SMDs), whereas PR systems aim to align legislative seat shares with parties' vote shares.

Persistent failures, paradoxes, and opportunities for strategic manipulation in both models have driven scholarly debates, messy interactions of experts with politicians, and institutional experimentation with hybrid arrangements (McLean, 2025; Taagepera & Kaminski, 2025). These systems combine distinct electoral rules within a single framework in the hope of improving institutional performance. This article evaluates whether the most comprehensive family of such hybrids, mixed electoral systems, has fulfilled this promise.

Mixed electoral systems, also termed “mixed-member systems” (Shugart & Wattenberg, 2001), “combined systems” (Norris, 2004), or “mixed systems” (Flis et al., 2025a, b, c, d), represent the most prominent attempt to reconcile the shortcomings of “pure” majoritarian and proportional systems while preserving their advantages. Shugart and Wattenberg (2001) famously describe them as offering “the best of both worlds,” and distinguish between interparty and intraparty dimensions. At the interparty level, the ideal outcome combines multiparty competition with alignment into broad governing blocs. At the intraparty level, it combines disciplined national parties with locally accountable representatives. Similarly, Ferrara et al. (2005) argue that mixed systems promote party development, balance national and local representation, and expand voter choice.

A common definition emphasizes the coexistence of multiple electoral formulas within a single election. Farrell (2011, pp. 8–9) defines mixed systems as combining plurality or majority rules with PR. Blais and Massicotte (1996, p. 115) similarly identify systems as mixed when distinct formulas operate simultaneously. Ferrara et al. (2005, p. 17) define them as systems using more than one formula to allocate seats.

However, combining formulas is neither sufficient nor the only defining feature of mixed systems. A broad scholarly consensus identifies four core characteristics: (1) the use of both SMD and PR tiers; (2) application of both tiers across all or nearly all of the country; (3) a roughly comparable number of seats in each tier; and (4) equal political status of representatives regardless of the tier through which they are elected (Flis et al., 2025a, b, c, d).

The first documented use of a mixed system to elect a representative body occurred in the Kingdom of Württemberg between 1906 and 1918 (Michalak, 2023). Although similar arrangements appeared in interwar Europe, the Federal Republic of Germany, which has used a mixed system continuously since 1949, is widely regarded as the prototype of the modern model. Adoption expanded over time, from roughly 2.5% of electoral systems in the 1960s to over 15% in the 1990s (Golder, 2005). According to IDEA (2026), mixed systems now account for approximately 15–16% of elections and debate about their advantages remains lively (Salamon & Howard, 2025).

As of 2025, 32 states employ mixed systems for national parliamentary elections (IDEA, 2026), including Germany, New Zealand, Italy, Japan, South Korea, Hungary, Lithuania, Mexico, and Ukraine. Their adoption reflects diverse pathways. In

post-communist states, mixed systems often emerged from negotiated transitions. In established democracies such as Italy and Japan, reform was driven by dissatisfaction with representation and political scandals. In other cases, institutional disruption created opportunities for change, as in New Zealand. Diffusion has also been shaped by strategic interactions among political actors pursuing partisan advantage (Ferrara et al., 2005).

Mixed systems are also used at the subnational level, notably in most German L nder and in elections to the Scottish and Welsh Parliaments (until May 2026). Debates about adopting mixed systems continue, including in Poland (Flis et al., 2025b).

This article proceeds as follows. Section 2 outlines the variants and typology of mixed systems, with particular attention to compensation mechanisms. Section 3 uses simulations based on Hungarian elections to demonstrate that different mixed designs produce substantially different outcomes. Section 4 analyzes the paradoxes, vulnerabilities, and opportunities for manipulation observed in practice. The final Sect. concludes. A Glossary of key concepts is included as an Appendix.

2 Variants and typology

Mixed systems encompass a wide range of institutional designs that produce distinct political outcomes. Key parameters include the relative size of the PR and SMD tiers, district structure, candidacy rules, ballot format, and, critically, the relationship between votes and seats across tiers (Flis et al., 2025a).

2.1 Basic defining parameters

Beyond the basic distinction between tiers, mixed systems differ substantially in how those tiers are configured. Three design features are common for all mixed systems and are especially consequential: the relative size of each tier, the rules governing candidate eligibility, and the structure of the ballot itself.

2.1.1 Proportion of seats

The balance between majoritarian and proportional tiers varies considerably. In Germany, seats are evenly divided between tiers. In New Zealand, 46% of seats are allocated through nationwide PR and 54% through SMDs. By contrast, in Italy's 1994–2001 system, 75% of seats were filled in the majoritarian tier. Similar asymmetries exist in contemporary systems such as South Korea (85% majoritarian) and Japan (62% majoritarian).

2.1.2 Dual candidacy

A central design choice is whether candidates may compete simultaneously in both tiers. Most mixed systems permit dual candidacy, including those in Germany, Japan, New Zealand, and South Korea. Earlier exceptions, such as Wales and Ukraine, imposed restrictions.

2.1.3 Number and type of votes

Most mixed systems employ two categorical votes: one for an SMD candidate and one for a party list. These are commonly labeled the “first” (candidate) and “second” (party) vote, as in Germany, or the “electorate” and “party” vote, as in New Zealand. Voters may abstain from one vote or split their votes across parties. Split-ticket voting is common, reaching 35.5% in New Zealand (2023) and 22.5% in Germany (2025) (Burden & Helmke, 2009; Gschwend & van der Kolk, 2006; Plescia, 2016).

Two-vote systems are not universal. Early Bundestag elections in 1949 used a single integrated vote, and similar arrangements persisted across some Länder (e.g. Hesse, Lower Saxony, North Rhine–Westphalia). For the longest period—nearly seven decades—a mixed electoral system with a single vote was used for elections to the Baden–Württemberg Landtag (Flis & Salamon, 2025). Single-vote systems have also been used in countries such as Romania, South Korea, and Taiwan, and remain in use in Italy, Monaco, Mexico, Lesotho, and Senegal.

2.2 Connections between tiers

The relationship between the two tiers is the primary basis for classifying mixed systems, and affects such variables as turnout (Keena, 2025). Table 1 distinguishes four types: parallel, compensatory, proportional, and combined.

In **parallel systems** (mixed-member majoritarian, MMM), the two tiers operate independently. Seats are allocated separately in each tier, and total party representation is the sum of both. This system is used in countries such as Japan, Lithuania, and Ukraine.

In **mixed compensatory systems (MCS)** (e.g., Hungary in 1990–2010 and Italy in 1994–2001) and **mixed-member proportional (MMP)** systems (e.g., Germany, New Zealand, Scotland, and most German Länder), the two tiers are linked in a way that corrects distortions generated by the majoritarian component. In MCS, this correction operates through the transfer of votes between tiers, whereas in MMP it operates through the transfer of seats.

In MCS systems, vote transfer may take either a **positive** or **negative** form. In the positive variant, as used in Hungary between 1990 and 2010, so-called partial (surplus) votes were aggregated at the national level. These included votes cast for candidates who failed to win a seat, as well as surplus votes exceeding the threshold required for victory. These votes were then used to allocate compensatory mandates from a national list.

In the negative variant, exemplified by the Italian system for the Chamber of Deputies (1994–2001), compensation operated through the *scorporo* mechanism. Under

Table 1 Vote and seat connections in mixed systems

	No vote connections	Vote connections present
No seat connections	Parallel (MMM)	Compensatory (MCS)
Seat connections present	Proportional (MMP)	Combined (MCB)

Source: Shugart & Wattenberg (2001); Flis and Michalak (2017); Flis et al. (2025a)

this rule, the number of votes equal to the support received by the runner-up candidate in a single-member district, plus one vote, was subtracted from the corresponding party list. This amount effectively represented the minimum number of votes required to win the district. As a result, *scorporo* can be interpreted as a “price” that the party list paid for a candidate’s success in the majoritarian tier (Bartolini, 2002).

In **MMP systems**, compensation occurs through the allocation of seats rather than votes. First, each party’s total seat entitlement is determined based on its proportional vote share. The number of seats already won in SMDs is then subtracted from this total. This mechanism produces a negative transfer of seats between tiers and ensures overall proportionality. It is employed in elections to the Bundestag, the New Zealand House of Representatives, and the Scottish Parliament.

In **mixed combined (MCB) systems**, all votes—both candidate and list votes—are used to determine overall electoral outcomes. This category includes systems employing either a single integrated vote or two separate votes.

A single-vote MCB system operated in Baden-Württemberg between 1952 and 2021. Voters cast one integrated vote that simultaneously (1) selected a district candidate, (2) determined the party’s total seat allocation in the Landtag, and (3) influenced the allocation of compensatory mandates. The proportional result was calculated by aggregating all candidate votes for each party across the Land. From this total, seats won in SMDs were subtracted. The remaining mandates were distributed to the best-performing losing candidates, initially based on absolute vote totals and, since 2016, on vote shares (Golosov, 2013; Massicotte, 2003; Roberts, 2006; Trefs, 2003).

A two-vote variant of the MCB system is used in elections to the Bavarian Landtag. As in the Bundestag, voters cast separate votes for a district candidate and a party list. Unlike the German federal system, however, the total number of seats allocated to each party is determined by the combined total of candidate and list votes.

These institutional differences are not merely formal. They produce distinct political outcomes, as Section 3 demonstrates using simulated Hungarian elections.

3 The 2026 Hungarian elections under alternative mixed systems

Mixed systems differ not only in institutional details but also in the outcomes and political consequences they generate. The Hungarian electoral system, introduced by Viktor Orbán’s Fidesz after his crushing 2010 victory, is a variant of the compensatory system (MCS). The elections of 12 April 2026, which brought Orbán’s defeat, were conducted under this system. Fidesz, until then in government, won 52 seats in the 199-member parliament; the opposition TISZA secured a constitutional majority with 141 seats; and the third party, Mi Hazánk, won 6.

We show below the political effects that four alternative mixed systems—one from each of the types distinguished earlier—would have produced. The simulation results are summarized in Fig. 1 We assume identical voting outcomes in both the single-member districts and the proportional tier, thereby neglecting Duvergerian psychological and coalitional effects and isolating mechanical effects alone. Because all systems share a similar structure (notably the unchanged district map), this assumption is realistic.

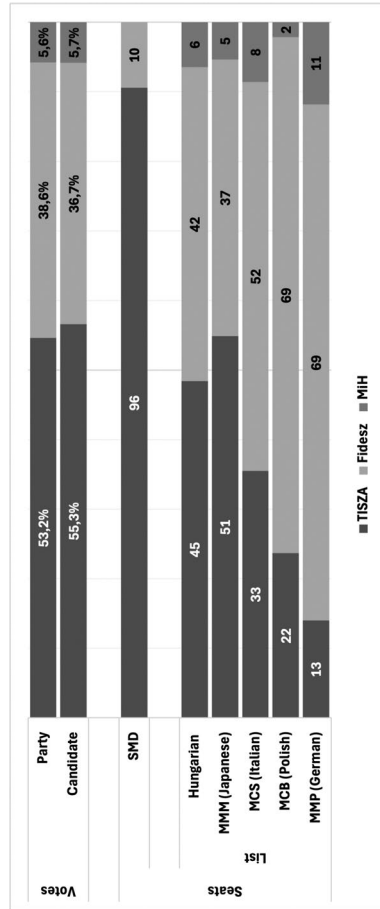


Fig. 1 Simulated seat distributions under five mixed systems. Note. SMD seats are unchanged: TISZA—96, Fidesz—10, Mi Hazánk (MIH)—0

We begin from the bottom of the chart with the oldest, pioneering German MMP system. Here, district seats are deducted from a party's total proportional allotment, and the total is allocated nationwide using the Webster–Sainte-Laguë method. TISZA would receive 109 seats, Fidesz 79, and Mi Hazánk 11. Having already won 96 district seats, TISZA would gain only 13 list seats; Fidesz, with 10 district seats, would receive 69; Mi Hazánk would obtain all its seats from the list.

Under German MMP, the winning TISZA loses more than every fifth seat, Fidesz's representation jumps from 52 to 79, and Mi Hazánk almost doubles its share. Given the high political polarization and the absence of regional parties, the simulation produced no overhang seats or orphaned districts.

As an example of a combined system (MCB), we adopt the Jefferson–D'Hondt-based mixed system proposed for Poland and considered by the Polish parliamentary committee (Flis et al., 2025b). It was designed to reproduce the seat distribution of the current PR system while strengthening MPs' territorial ties and reducing intra-party competition for list positions.

Because the differences between list and candidate votes in 2026 were minimal, using their sum as the basis for proportional allocation would not materially change the outcome. The decisive factor is our assumption that seats are allocated not nationwide but separately within each of the 20 counties (including Budapest)—the administrative division employed for proportional allocation under the earlier Hungarian system. Seats would be distributed by the restricted Jefferson-D'Hondt method, as in Scotland. By design, this method eliminates overhang seats, even when the number of district seats won exceeds the seats due to a party under the standard Jefferson-D'Hondt method.

The Polish system gives TISZA 23 fewer seats and Mi Hazánk 4 fewer than the actual elections. Fidesz again benefits, gaining 27. Despite a formally proportional allocation, a party with single-digit support is reduced to 2 seats—consistent with what is known about the Jefferson–D'Hondt method in small districts (Flis et al., 2020), which in the Hungarian case would average nearly 10 seats. Such a relatively small district magnitude would introduce high "natural thresholds" in districts, effectively reducing Mi Hazánk's seats.

The next variant is a compensatory system with negative vote transfer, modeled on the former Italian *scorporo*. From the list votes of any party that wins a district seat, a number of votes equal to the runner-up's total in that district is subtracted; the 93 proportional-tier seats are then distributed on the basis of these corrected counts. The correction is intended to bring outcomes closer to proportionality. Here the smallest party receives 8 seats—2 more than in actual elections, but still 3 fewer than under the German system. Fidesz wins fewer seats than in the two earlier variants, but still 10 more than in the actual election. TISZA loses 12 seats.

The final alternative is the Japanese parallel system (MMM), in which votes and seats are counted entirely separately in the two tiers. This system is most friendly towards dominant parties winning most SMD seats. No wonder that TISZA receives more than half of the proportional-tier seats, gaining 6 at the expense of Fidesz (5 lost) and Mi Hazánk (1 lost). MMM thus rewards TISZA most.

Against these four alternatives, the actual Hungarian system—compensatory with positive vote transfer—rewards the winner only slightly less than the parallel sys-

tem. It is precisely this system, in which the proportional tier reinforces the winner's advantage rather than compensating for SMD disproportionality, that explains the scale of TISZA's success.

The Hungarian system gave TISZA the constitutional majority needed to dismantle the barriers Fidesz had built into Hungary's constitutional order after its crushing victory 16 years earlier. Apart from MMM, which is even more favorable to TISZA, the three remaining compensatory systems give TISZA between 109 and 129 seats. Since a constitutional majority requires 133 seats, none of these would have delivered one. Moreover, the German system would leave TISZA only 9 seats above the simple majority needed to form a cabinet.

The combined effects of the five systems are visible in Fig. 2, which displays proportionality profiles—a tool introduced by Taagepera and Shugart (1989). A profile plots a party's advantage ratio (i.e., the ratio of a party's seat share to its vote share, expressed as a percentage). The figure shows these ratios for the three parties under both the actual Hungarian system and the four simulated alternatives.

Figure 2 illustrates that the German MMP system is almost perfectly proportional: one percent of votes yields roughly one percent of seats. The other systems all exhibit progressive proportionality (Haman, 2017), though they differ in how strongly they reward the winner and weaken the smallest party. Notably, systems without seat linkage—MMM and the Italian and Hungarian MCS variants—set the second-to-third-party ratio differently from the system using the Jefferson–D'Hondt method in small districts. Under the actual Hungarian system, the winner TISZA has an advantage ratio of 133%, while the defeated Fidesz has a (dis-)advantage ratio of only 68%.

While these simulations highlight variation in outcomes, they do not capture the full range of challenges observed in practice. Section 4 turns to paradoxes and manipulation.

4 Paradoxes of mixed systems

A quarter century has passed since Shugart and Wattenberg (2001), enabling systematic evaluation of mixed electoral systems. While these systems revealed various advantages, they have proven highly susceptible to a range of paradoxes and strategic manipulations by both voters and political actors. No wonder some scholars call them unpredictable and leading to unforeseen consequences (Chiaromonte & Paparo, 2025). The underlying explanation behind many problems lies in how both levels become mutually "contaminated"—either independently or through their interplay—producing unexpected effects (Herron & Nishikawa, 2001; Shikano & Herron, 2025; Vučićević, 2025).

4.1 Excessive complication

As Shugart and Wattenberg (2001, p. 592) observed, “perhaps the most serious” criticism of mixed systems is their complexity. Compared with majoritarian systems, mixed arrangements are significantly less intuitive. This complexity often leads to voter misunderstanding, particularly regarding the transformation of votes into seats

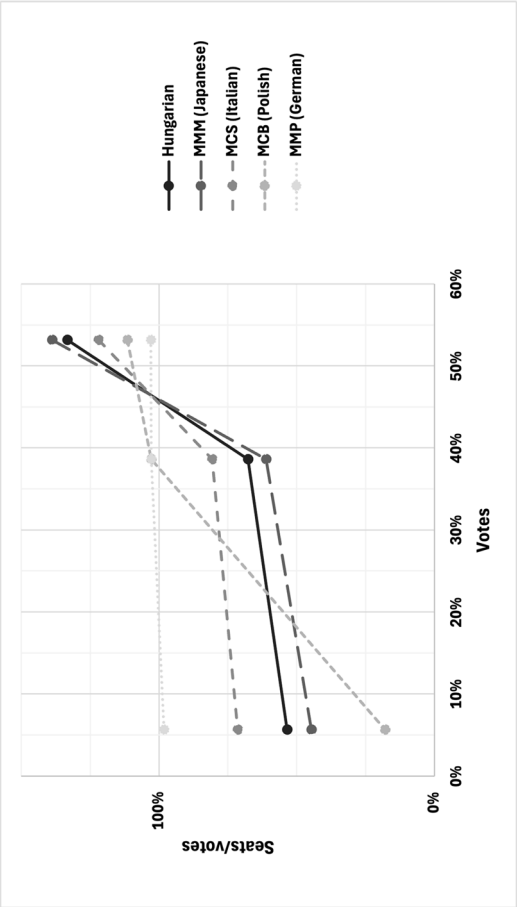


Fig. 2 Estimated advantage ratios in the Hungarian 2026 elections under five mixed systems. Note. Advantage ratios are plotted against each party's vote share for Mi Hazánk, Fidesz, and TISZA, under the actual election and the four simulated alternatives. Because identical vote shares are assumed across all scenarios, each party's points are vertically aligned

and the operation of two-vote mechanisms. Such misunderstandings may, in turn, undermine the perceived legitimacy of electoral outcomes.

These problems are especially pronounced in the early stages following adoption. In Scotland's 2007 parliamentary election, 42% of voters did not understand how votes are translated into seats (Curtice et al., 2009). Similar confusion was observed in New Zealand after the introduction of MMP in 1996 (Karp, 2002).

Hungary's 1990–2010 system illustrates the extreme. As Benoit (1996, p. 164) noted, electoral experts were required to explain the system through extensive media efforts, which remained only partially effective. Complexity also facilitates strategic manipulation. The 2011 reform by the Fidesz–KDNP coalition introduced majoritarian elements, redistricting, winner compensation, and expanded suffrage for citizens abroad. Subsequent elections demonstrated its effects: the coalition secured 80–90% of SMDs, benefited from compensatory mechanisms to obtain a two-thirds constitutional majority, and received approximately 95% of votes cast by voters abroad (Tanács-Mandák & Horváth, 2025).

No less trouble than understanding the mechanisms of translating votes into seats is caused by the simultaneous casting of two votes. In purely majoritarian or proportional systems, voters vote either for a candidate or for a party list. In mixed systems they must do both at the same time. Dual voting further complicates voter decision-making. In MMP systems, the two votes differ in importance. In Germany, the “first” vote selects a district candidate, while the “second” vote determines proportional seat allocation. Despite the terminology, the second vote is decisive (Jesse, 1995). The German two-vote system is therefore in essence—as Jesse put it—a “system of the second vote.” This asymmetry has been strategically exploited. The FDP, for example, encouraged voters to treat the second vote as less consequential or as a low-risk option (Jesse, 1988; Roberts, 1988).

4.2 Decoys

Contemporary political parties understand the operation of mixed systems far better than the average voter, not least because they often participate in designing them. This knowledge is frequently used not only to compete within existing rules but to exploit or circumvent them.

The coexistence of two tiers within a single electoral system creates opportunities for tactical manipulation through party splitting and the creation of fictitious “decoy” entities. In MMP systems, a dominant party may concentrate on winning seats in the majoritarian tier, while an affiliated decoy party competes exclusively in the proportional tier. This arrangement ensures that votes cast for the dominant party are not offset by compensatory mechanisms: since the decoy does not win SMD seats, it receives a disproportionately large share of proportional mandates.

Such artificial party splitting violates the constitutional principle of equality of voters and parties (Janiszewski, 1982; Nohlen, 2023). For this reason, some legislatures—most notably New Zealand—have explicitly prohibited it. Similar strategies were considered in Germany in the 1970s, when the Christian Democrats explored using the Bavarian CSU as a “fourth party” to expand their parliamentary representa-

tion. The plan was abandoned because it would have triggered intra-coalition competition, particularly from the CDU in Bavaria (Roberts, 2006, p. 5).

The Italian experience under the MCS system for elections to the Chamber of Deputies (1994–2001) provides a particularly clear example of decoy manipulation. As noted above, the *scorporo* mechanism was designed to reduce distortions created by the majoritarian tier by subtracting from a party's proportional vote total the number of votes required for its candidates' district victories (Ferrara, 2004, p. 394). In effect, each SMD victory imposed a cost on the party's proportional representation.

While the mechanism functioned as intended in the 1994 and 1996 elections, parties had learned to circumvent it by 2001. The electoral law required candidates to be affiliated with a party list but did not specify meaningful conditions for such lists. Parties therefore created so-called “decoy lists” (*liste civetta*), to which their SMD candidates were formally assigned. Because these lists received negligible electoral support, the *scorporo* mechanism applied only to them, leaving the main party lists unaffected (Bartolini, 2002).

The empirical impact of this strategy was substantial. In the 1994 and 1996 elections, *scorporo* votes constituted 28% and 37% of total votes, respectively. By 2001, this share fell below 8%. Forza Italia alone had 3,733,868 votes deducted from its proportional total in 1994, 2,665,357 in 1996, and only 328,007 in 2001 (Bartolini, 2002). In practice, the compensatory MCS system was transformed into a de facto parallel (MMM) system with no effective linkage between tiers.

A closely related phenomenon has emerged in South Korea. Since 2019, elections to the National Assembly have used a mixed semi-compensatory system with 253 majoritarian and 47 proportional seats. The compensatory mechanism reduces the number of proportional seats allocated to parties that perform well in SMDs.

As in Italy, a legal loophole enabled parties to circumvent this mechanism. Electoral law allows parties to compete in only one tier, making it possible to run candidates in SMDs without presenting a proportional list. Major parties exploited this feature by creating “satellite parties”—formally separate entities competing exclusively in the proportional tier but closely aligned with their parent organizations.

In the 2020 elections, the Democratic Party of Korea created the Citizens' Party of Korea, while the United Future Party established the Future Korea Party. These entities were deliberately branded to signal affiliation with their parent parties, and voters were encouraged to support both. The strategy was repeated in 2022, with the People Power Party creating the People's Future Party and the Democratic Party forming the Democratic Alliance of Korea (Moon & Kim, 2025).

This arrangement allowed major parties to maximize representation in both tiers simultaneously. Parent parties won SMD seats, while satellite parties captured proportional seats without being penalized by the compensatory formula. As a result, the Democratic Party of Korea obtained 17 proportional seats in 2020 instead of the 6 to which it was entitled, and 14 in 2022 instead of none (Moon & Kim, 2025).

4.3 On the shoulders of giants: coordination between coalitional partners

In some systems, manipulation does not rely on institutional loopholes but on coordinated behavior among political actors. In New Zealand and Japan, electoral coor-

dination between coalition partners has systematically distorted the functioning of mixed systems.

In New Zealand, one of the key criteria guiding the Royal Commission's recommendation to adopt MMP was fairness among political parties. Under this principle, "the number of seats gained by a political party should be proportional to the number of voters who supported that party" (Royal Commission on the Electoral System, 1986, p. 11). In practice, however, this principle has not been consistently realized.

Disproportionate outcomes were already visible in the first MMP election in 1996. The Christian Coalition received 4.33% of the nationwide vote but failed to cross the 5% threshold and won no seats, while United Future secured a seat with only 0.88%. Similar patterns recurred in subsequent elections, including 2008 and 2014. In 2008, New Zealand First won 4.07% of the vote but no seats, whereas Progressive Coalition (0.91%) and United Future (0.87%) each entered parliament. In 2014, the Conservative Party obtained 3.97% with no representation, while United Future (0.69%) and ACT (0.22%) each secured a seat.

These outcomes reflect institutional design combined with strategic coordination. Under New Zealand's rules, a party can enter parliament either by surpassing the 5% nationwide threshold or by winning a single SMD seat. A party that meets only this alternative threshold retains its district seat and becomes eligible for proportional representation under the so-called coat-tails rule (Palmer & Palmer, 2024). Because the alternative threshold is minimal, small parties can gain parliamentary access through a single constituency victory. In eight of the ten elections between 1996 and 2023, at least one such party entered parliament. The decisive districts are commonly referred to as **trigger electorates** (Salamon, 2024).

The emergence of trigger-electorate effects has not been spontaneous. Small parties concentrate resources in selected constituencies, often fielding nationally prominent leaders and investing disproportionately in local campaigns. United Future repeatedly relied on Peter Dunne in Ōhāriu, Progressive Coalition on Jim Anderton in Wigram, and ACT on Rodney Hide (2005–2008) and David Seymour (2014–2023) in Epsom.

This strategy is effective only with the tacit or explicit cooperation of major parties. Both Labour and National have supported allied minor parties in trigger electorates by limiting competition, refraining from fielding candidates (e.g., National in Ōhāriu in 1996 and 1999), nominating weak candidates (Labour in Wigram), or explicitly encouraging strategic voting (National in Epsom in 2011). These arrangements reflect coalition incentives: Labour governed with the Progressive Coalition (2002–2008), while National's minority governments (2008–2017) relied on United Future and ACT.

Comparable coordination occurs in MMM systems. In Japan, parties engage in so-called **stand-down agreements**, under which they refrain from contesting selected SMDs to benefit coalition partners (Flis & Kaminski, 2026). In the 2021 elections, fewer than one quarter of districts featured candidates from all three largest parties (LDP, CDP, and Nippon Ishin no Kai), and in more than half (157 of 289 districts) only one or two of the six largest parties competed (Maeda, 2025). Coordination between the Liberal Democratic Party (LDP) and Komeito is particularly systematic: the LDP reserves several districts for Komeito, which in turn supports LDP candidates in the vast majority of other constituencies.

Such coordination produces measurable behavioral effects. In districts where major parties withdraw in favor of allies, voter turnout tends to decline, and the incidence of invalid ballots increases. Survey evidence from the Japanese Electoral Study indicates that voters pressured to support non-preferred candidates are more likely to express dissatisfaction with politics than those able to vote in line with their preferences (Maeda, 2025).

4.4 Uncontrolled parliamentary growth

In MMP systems, **overhang seats** arise when a party wins more seats in SMDs than its proportional entitlement. These seats are retained, creating imbalances that must be corrected, often by increasing the total size of the legislature.

The scale of this phenomenon varies across countries. In New Zealand, overhang seats have appeared five times (2005, 2008, 2011, 2014, and 2023) but never exceeded two out of 120 seats. A similarly limited effect was observed in Romania in 2008, when the Chamber of Deputies gained one additional seat and the Senate remained unchanged (Marian & King, 2010). However, in 2012 the Romanian system produced a dramatic expansion: the Chamber of Deputies grew from 333 to 412 members, and the Senate from 138 to 176. This sudden increase, generated by the electoral system and exploited by political actors, contributed to the abandonment of the mixed system (Giugal et al., 2020).

The German Bundestag represents the most prominent case of sustained parliamentary expansion. Overhang seats have occurred in nearly every federal election, with the exception of those between 1965 and 1971. Prior to reunification, their scale was relatively limited, but it increased significantly thereafter (see Fig. 3).

The main reason for such a large number of overhang seats in Bundestag elections was the fragmentation of the German party system. Also not insignificant were such factors as the division of constituencies, voter turnout, and vote splitting (Behnke, 2025).

Even when limited in number, overhang seats can have decisive political consequences. In the 2002 Bundestag election, the CDU/CSU and SPD each won 247 seats based on proportional votes. The final outcome was determined by overhang seats: the SPD secured four, while the CDU/CSU obtained one, thereby ensuring a Social Democratic victory (James, 2003, p. 59). Incidentally, in 1995 Gerhard Schröder, as Prime Minister of Lower Saxony, unsuccessfully sought before the Federal Constitutional Court to change the overhang seats provisions of the electoral law. Had the Court at that time agreed with Schröder, the SPD would most probably not have won the 2002 parliamentary elections (James, 2003, p. 59).

The large number of overhang seats undermined the proportional character of federal parliamentary elections. To address this, compensatory seats were introduced in 2013. While this reform improved proportionality, it also fueled the uncontrolled growth of successive Bundestags. The statutory size of the federal parliament, set at 598 seats in 2002, rose to 631 in 2013 (4 overhang, 29 compensatory), 709 in 2017 (46 overhang, 65 compensatory), and 735 in 2021 (34 overhang, 103 compensatory).

The 2023 electoral reform sought to halt this expansion by eliminating overhang seats. Under the new rules, a party may receive only as many mandates in a given state as justified by its share of second votes. The "excessive" seats are eliminated by

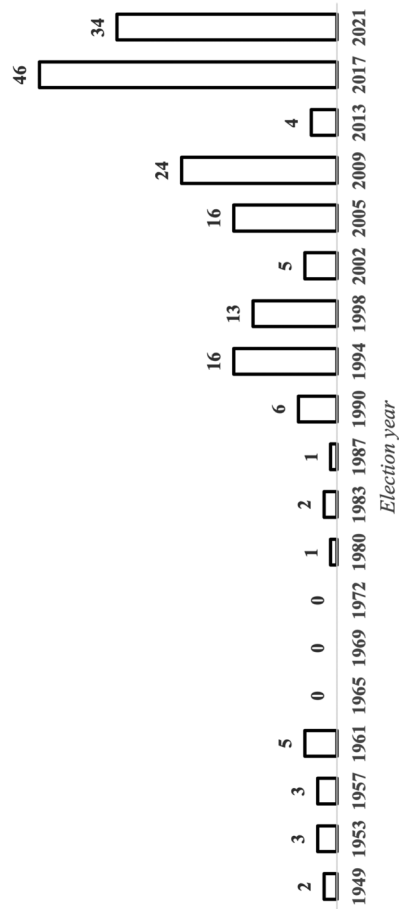


Fig. 3 Overhang seats in Bundestag elections, 1949–2021. Source: Own compilation based on Federal Returning Officer (2026)

not assigning mandates to the weakest constituency winners or by giving those, who are listed on the PR list, a PR seat. The total number of assigned seats is equal to the PR (Behnke, 2025, p. 121).

While this reform resolved the problem of parliamentary expansion, it introduced a new one: **“orphaned seats.”** These arise when constituency winners are not seated because their party has exceeded its proportional allocation. Following the 2025 Bundestag election, 23 such cases occurred, including fifteen CDU candidates, four AfD, three CSU, and one SPD (Flis et al., 2025a, b, c, d). The solutions introduced in Scotland and Bolivia eliminated this problem, using restricted Jefferson-D’Hondt method (Flis et al., 2025b).

4.5 “Zombie” politics

Controversy also surrounds the practice of **dual candidacy**, that is, nominating the same individual simultaneously in a single-member district and on a PR list. As a result, a candidate rejected by voters in a district contest may still enter parliament via the proportional tier. An additional concern is that, in most mixed systems, party lists are closed, meaning that party leadership—not voters—determines which candidates receive list mandates and in what order. This problem does not, however, apply to systems with localized electoral lists, in which all candidates owe their mandates directly to the votes they have received (Trefs, 2003).

Using the example of Japan, Pekkanen et al. (2006) describe such deputies as “zombies”—politicians rejected by voters in district contests but “resurrected” through proportional list allocation.

This phenomenon extends far beyond Japan. In New Zealand, between 1996 and 2023, 2,915 dual candidates were nominated, representing 86.1% of all candidates in SMDs. Of these, 1,023 were elected: 611 by winning district seats and 412 via party lists despite losing in their districts. On average, roughly one-third of MPs in the New Zealand parliament were “zombies,” with the share ranging from 30.8% after the 1999 election to 36.7% after the 2002 election (calculations based on New Zealand Electoral Commission, 2026).

The phenomenon is even more pronounced in the German Bundestag. Of the 709 deputies elected in 2017, 388 (54.7%) had lost in SMDs but entered parliament via party lists. Similar patterns persisted in subsequent elections: 420 of 736 deputies (57.1%) after 2021, and 335 of 630 (53.2%) after 2025, fall into this category (calculations based on Federal Returning Officer, 2026).

Two factors account for the scale of this phenomenon: the widespread use of dual candidacy and the large number of overhang and—since 2013—compensatory mandates generated by the electoral system. For example, after the 2017 election, the Bundestag included 299 district winners and 410 list deputies. The system produced 111 overhang and compensatory mandates, meaning that 410 seats—rather than the baseline 299—were filled from party lists; of these, 388 (95%) were held by candidates who had unsuccessfully contested district seats.

The 2023 electoral reform modestly reduced the prevalence of “zombie” legislators in the 2025 Bundestag, but the phenomenon remains substantial and continues to raise concerns about political accountability.

5 Conclusion: constitutional considerations

The constitutional entrenchment of mixed systems ranges from detailed specification to loose recognition, but in all cases these arrangements shape how such systems function in practice (Batto et al., 2016). Lesotho's constitution, revised in 2018, explicitly mandates that elections to the National Assembly (the lower house) follow a MMP system, specifying the allocation of 80 seats elected by majoritarian rules and 40 by PR (Lesotho Constitution, 2026). Similarly, although New Zealand lacks a single codified constitution, its Electoral Act 1993 is widely regarded as a constitutional statute. It defines the electoral system as MMP and includes additional provisions, such as the allocation of Māori seats (New Zealand Electoral Act, 1993, 2026).

In contrast, Germany's Basic Law establishes only general principles governing elections, requiring them to be general, direct, free, equal, and secret. It does not explicitly reference a mixed system, the two-vote structure, or proportionality. By relegating electoral design to ordinary legislation, this framework facilitates institutional flexibility and enables reforms such as the 2023 changes, which capped the size of the Bundestag and introduced mechanisms that effectively create “orphaned” constituencies (Germany Basic Law, 1949).

This variation in constitutional design matters because it shapes both the scope of the hopes that reformers invest in mixed systems and the severity of the disappointments that follow. The constitutional case for adopting mixed systems has long rested on a promise of synthesis: combining the local accountability and decisiveness of majoritarian elections with the representational fairness of proportional systems. Shugart and Wattenberg (2001) famously captured this aspiration in the phrase “the best of both worlds,” and Ferrara et al. (2005) extended it to expectations of stronger party development, dual accountability to local and national constituencies, and greater opportunities for voters to express their preferences. These goals are, at their core, constitutional: they concern the equal treatment of voters and parties, the legitimacy of representation, and the responsiveness of government to the popular will.

The evidence presented in this article, however, suggests that this constitutional promise remains only partially fulfilled. The simulations of the 2026 Hungarian elections demonstrate that mixed systems do not constitute a single institutional type but rather a set of distinct mechanisms producing markedly different seat distributions—some favoring smaller parties, others reinforcing larger ones. This variation alone complicates the claim that mixed systems provide a stable and predictable balance between proportionality and majoritarian outcomes.

Beyond seat allocation, the paradoxes and manipulations documented in Section 4 point to deeper challenges. The complexity of mixed systems can undermine voter understanding and, in turn, electoral legitimacy. The decoy-party phenomenon in Italy and South Korea shows how compensatory mechanisms can be effectively neutralized. Electoral coordination in New Zealand and Japan, while often informal, privileges allied parties over competitors and challenges the principle of equal treatment. The expansion of the Bundestag, and the subsequent emergence of orphaned constituencies, illustrates how institutional corrections can generate new tensions. Finally, the persistence of “zombie” legislators—candidates rejected in district contests but elected via party lists—raises concerns about accountability.

The threats of manipulation embedded in mixed systems are difficult to separate, since the institutional components interact deeply rather than operating as independent modules. Arguably, the primitive vulnerability is the inter-tier transfer mechanism, which creates strategically exploitable arbitrage between tiers. The two-ballot structure is best understood not as an independent threat but as an amplifier: it supplies the slack in the strategy space through which transfer-based manipulation, such as decoy lists, is executed. Such manipulation is cheap precisely because it does not feel like lying. Formally, this places the problem closer to violations of split-proofness than to classical preference misrepresentation of the Gibbard–Satterthwaite type. Finally, dual candidacy and best-loser provisions constitute a defect of a different kind: they damage accountability rather than enable seat-stealing, decoupling electoral defeat from career consequences.

The constitutional framework within which a mixed system operates shapes the prospects for addressing these challenges. Where electoral rules are entrenched in constitutional text, as in Lesotho, institutional rigidity limits both manipulation and reform. Where constitutional provisions remain general, as in Germany, legislators have greater flexibility to adjust electoral rules, but this flexibility may also be used strategically by governing coalitions. The Hungarian case illustrates how such discretion can be leveraged to consolidate political advantage.

The central question, therefore, is not only whether mixed systems can deliver the “best of both worlds,” but also whether the constitutional architecture surrounding them can constrain strategic behavior. A quarter century of experience suggests that designers of mixed systems must consider not only the interaction between tiers, but also the incentives for coordination, circumvention, and institutional gaming that these systems create. Mixed systems remain a constitutional experiment whose results, on balance, counsel caution rather than over-optimism. A key lesson of the ‘mixed-systems experiment’ is that good intentions do not translate easily into robust designs; institutional and strategic surprises appear inevitable.

Appendix: Glossary

The following entries define the key terms used in the article, with particular attention to the family of mixed electoral systems, their compensation mechanisms, the paradoxes they generate, and the constitutional frameworks within which they operate. Entries are listed alphabetically; abbreviations appear under the full name, with a cross-reference at the abbreviation. Foreign-language terms are given in *italics*. References are to positions in the Reference list.

A

Advantage ratio. The ratio of a party’s seat share to its vote share, sometimes expressed as a percentage. A value of 1.0 indicates perfect proportionality; values above 1.0 indicate overrepresentation, and values below 1.0 indicate underrepresentation. Used in the construction of proportionality profiles (Taagepera & Shugart, 1989). Under the 2026 Hungarian system, the winning TISZA obtained an advantage ratio of 133 percent against Fidesz’s 68 percent. See *proportionality profile*.

Alternative threshold. The secondary route by which a party that fails the nationwide threshold nevertheless qualifies for list seats if it wins at least in some single-member districts. In New Zealand's MMP system, one district suffices. Once crossed, the threshold triggers the *coat-tails rule*. A low alternative threshold, combined with strategic support from major parties, creates *trigger electorates* (Palmer & Palmer, 2024; Salamon, 2024).

B

Basic Law (*Grundgesetz*). The 1949 constitutional document of the Federal Republic of Germany. It establishes only general principles governing elections—that they must be general, direct, free, equal, and secret—and does not prescribe a mixed system, the two-vote ballot, or proportionality. By relegating electoral design to ordinary legislation, it affords Parliament wide latitude to reform the federal electoral law, as demonstrated by the Bundestag reforms of 2013 and 2023 (Germany Basic Law, 1949).

C

Closed list. A party list on which the order of candidates is fixed by the party, so that voters who endorse the list cannot alter the ranking of its members. Closed lists are the default format for the list tier in most mixed systems and have been criticized for concentrating candidate-selection power in party leadership, particularly in the context of dual candidacy (see *zombie legislator*).

Coat-tails rule. The provision in New Zealand's MMP system whereby a party that clears the *alternative threshold* (by winning at least one single-member district) becomes eligible to receive list seats in proportion to its nationwide vote, even if that vote falls below the 5-percent statutory threshold (Palmer & Palmer, 2024). See also *trigger electorate*.

Combined system (MCB). One of the four principal types of mixed system in the Shugart and Wattenberg (2001) and Flis and Michalak (2017) typology. In a combined system, both candidate votes and list votes jointly determine each party's overall seat share, whether through a single *integrated vote* (as in Baden-Württemberg between 1952 and 2021) or two separate votes (as in Bavaria). Distinguished from MMP by the use of candidate votes in the proportional calculation.

Compensatory mandate. A list-tier seat awarded under a compensatory system (MCS) through the aggregation of partial or *scorporo*-adjusted votes. Compensatory mandates are typically allocated from a national list on the basis of votes that are "transferred" from the single-member district tier. Distinct from the compensatory seats used in the German Bundestag after 2013 to offset overhang.

Compensatory seat (*Ausgleichsmandat*). In the German Bundestag between 2013 and 2023, an additional list seat awarded to non-overhang parties to restore nationwide proportionality once a party had accumulated *overhang seats*. The cumulative effect was a sharp expansion of the Bundestag, from a statutory 598 seats in 2002 to 735 in 2021, prompting the 2023 reform (Behnke, 2025).

Compensatory system (MCS). A mixed system in which the two tiers are linked through vote-level compensation: the list seats are allocated using a corrected vote count that adjusts for the distortions produced by the majoritarian tier. Compensation may be *positive* (Hungary, 1990–2010), where surplus and wasted SMD votes are aggregated nationally for list allocation, or *negative* (Italy, 1994–2001), where list votes are reduced by the winning candidates' margins under the *scorporo* rule.

Constitutional entrenchment (of an electoral system). The degree to which electoral rules are codified in a constitution or constitutional statute rather than in ordinary legislation. Entrenchment ranges from detailed specification of the electoral formula (Lesotho's 2018 Constitution mandates 80 SMD and 40 PR seats in an MMP arrangement) through recognition as a constitutional statute (the New Zealand Electoral Act, 1993) to the codification of only general principles (Germany's Basic Law). Higher entrenchment constrains both strategic manipulation and reform.

Constitutional majority. A parliamentary supermajority, typically two-thirds of the legislature, required to amend the constitution. In the 199-seat Hungarian National Assembly a constitutional majority is 133 seats—the threshold TISZA crossed in 2026 and Fidesz had held since 2010 under the compensatory system introduced after the 2010 election.

Constitutional statute. A statute that, although not part of a single codified constitution, is treated as constitutional in its substance and authority. The New Zealand Electoral Act, 1993 is the canonical case: it defines the national electoral system as MMP and specifies, among other things, the allocation of Māori seats.

D

Decoy list (*liste civetta*). A nominal party list to which single-member district candidates are formally affiliated for the sole purpose of absorbing the penalty imposed by a compensation mechanism. In Italy (1994–2001), decoy lists attracted negligible popular support, so that the *scorporo* adjustment reduced only their vote totals, leaving the main party lists intact. The share of *scorporo*-eligible votes collapsed from 37 percent in 1996 to below 8 percent in 2001 (Bartolini, 2002).

Decoy party. A separately registered party affiliated with a major party that contests only the proportional tier in order to evade compensatory penalties tied to SMD performance. Artificial party splitting of this kind is prohibited in New Zealand and was considered but rejected in Germany during the 1970s. The strategy has been most visible in South Korea, where *satellite parties*—the Citizens' Party of Korea, the Future Korea Party, and their successors—allowed major parties to win disproportionate list seats in 2020 and 2022 (Moon & Kim, 2025).

District magnitude. The number of seats returned by an electoral district. In mixed systems the SMD tier has a magnitude of one by definition; in the PR tier, magnitude varies by level of aggregation and shapes the effective threshold. Small magnitudes under the Jefferson–D'Hondt method generate relatively high natural thresholds, as in the Polish MCB proposal discussed in the article.

Dual candidacy. The practice of nominating the same individual simultaneously on a party list and in a single-member district. Permitted in most mixed systems (Germany, Japan, New Zealand, South Korea) and historically restricted in a few (notably Ukraine and Wales). Dual candidacy is the institutional precondition for *zombie legislators*.

Duvergerian effects. The two channels through which electoral rules shape party systems identified in the tradition of Duverger's law: the *mechanical effect*, which governs how a given distribution of votes is translated into seats, and the *psychological effect*, which shapes strategic voting and party coordination in response. The simulations in Sect. 3 isolate the mechanical effect by holding vote distributions fixed across all four alternative mixed systems.

E

Electoral system. The set of institutional rules that translate votes into seats, including ballot structure, district magnitudes, allocation formulas, and thresholds. In established democracies and emerging systems alike, the electoral system constitutes a core component of the constitutional rules governing the allocation of political authority.

Electoral threshold. The minimum level of electoral support a party must obtain to qualify for list seats, ordinarily expressed as a nationwide vote share (e.g., 5 percent in Germany and New Zealand). Thresholds may be absolute or may be complemented by an *alternative threshold* permitting entry through SMD victory.

Electoral tier. A distinct level of seat allocation operating under a common set of rules. Mixed systems combine an SMD (majoritarian) tier with a PR (list) tier that ordinarily covers the whole country; a defining characteristic of the family is that each tier carries a roughly comparable share of the total seats.

F

First vote/second vote (*Erststimme/Zweitstimme*). In the German MMP ballot, the first vote selects a single-member district candidate, and the second vote determines the party's nationwide proportional allocation. Despite the terminology, the second vote is decisive for the overall distribution of seats. Jesse (1995) therefore characterizes the German arrangement as, in essence, a "system of the second vote." In New Zealand, the parallel labels are *electorate vote* and *party vote*.

G

Grundgesetz. See *Basic Law*.

I

Integrated (single) vote. A mixed-system ballot format on which a single mark simultaneously elects an SMD candidate and counts toward the party's share of list seats. Employed in the first Bundestag election of 1949 and in several German Länder (Hesse, Lower Saxony, North Rhine–Westphalia, and notably Baden–Württemberg between 1952 and 2021), and currently in use in Italy, Monaco, Mexico, Lesotho, and Senegal.

Interparty dimension. A dimension of electoral-system performance concerning relations among parties, especially the balance between robust multiparty competition and alignment into broad governing blocs. Introduced by Shugart and Wattenberg (2001) alongside the *intraparty dimension*.

Intraparty dimension. A dimension of electoral-system performance concerning within-party relations, especially the balance between disciplined national parties and locally accountable representatives. Central to the case that mixed systems may combine "the best of both worlds" by producing both kinds of linkage simultaneously (Shugart & Wattenberg, 2001).

J

Jefferson–D'Hondt method. A divisor-based seat-allocation method that rounds down and therefore tends to favor larger parties. In small districts the method induces high natural thresholds, as illustrated by the Polish MCB simulation. The *restricted Jefferson–D'Hondt* variant used in Scotland and Bolivia eliminates overhang and orphaned seats by capping each party's seats at its proportional entitlement (Flis et al., 2025b).

L

Liste civetta. See *decoy list*.

M

Majoritarian system. An electoral system in which representatives are elected in single-member districts, typically under plurality or majority rule. Majoritarian and proportional systems are the two “pure” models from which mixed systems are constructed.

Mixed electoral system. An electoral system that combines an SMD tier and a PR tier within a single framework, where the two tiers cover all or nearly all of the country, hold a roughly comparable share of the total seats, and return representatives of equal political status (Flis et al., 2025a, b, c, d). Also referred to as *mixed-member systems* (Shugart & Wattenberg, 2001) or *combined systems* (Norris, 2004). The four principal variants in the typology adopted here are MMM, MCS, MMP, and MCB.

Mixed-member majoritarian (MMM). See *parallel system*.

Mixed-member proportional (MMP). A mixed system in which the overall seat share of each party is determined by its nationwide list vote, and its district-tier seats are subtracted from that total. Compensation therefore operates through seat transfer, producing overall proportionality in the ideal case. Employed in the German Bundestag, the New Zealand House of Representatives, the Scottish Parliament, and most German Länder.

Mixed semi-compensatory system. The South Korean variant introduced in 2019, in which the compensatory mechanism reduces (but does not eliminate) the list-tier allocation of parties that perform strongly in SMDs. The partial character of the compensation, combined with a legal allowance for parties to contest only one tier, has permitted the rise of *satellite parties* (Moon & Kim, 2025).

N

Natural threshold. The effective vote share below which a party is unlikely to win a seat given district magnitude and allocation formula, arising as a mechanical feature of the system rather than from any statutory rule. Small district magnitudes under the Jefferson–D’Hondt method generate high natural thresholds that can exclude parties with single-digit national support, as shown for Mi Hazánk in the Polish MCB simulation.

Negative vote transfer. A compensation mechanism in which votes are subtracted from a party’s list total on the basis of its SMD success. The Italian *scorporo* (1994–2001) is the canonical case. Contrast with *positive vote transfer*.

O

Orphaned seat (orphaned constituency). A single-member district whose winner is not seated in parliament because the winning candidate’s party has already exhausted its proportional allotment. Orphaned seats are a product of Germany’s 2023 electoral reform, which capped the Bundestag by denying mandates to the weakest constituency winners; twenty-three such cases occurred after the 2025 Bundestag election (Flis et al., 2025a, b, c, d). The restricted Jefferson–D’Hondt method used in Scotland and Bolivia avoids the problem.

Overhang seat (*Überhangmandat*). In MMP, a seat that arises when a party wins more single-member districts than its proportional entitlement warrants. Under the rules applied to the Bundestag before 2013, overhang seats were retained without compensation, inflating the legislature; between 2013 and 2023 they were offset by

compensatory seats; since 2023 they have been eliminated in Germany by denying mandates to marginal constituency winners, at the cost of generating *orphaned seats* (Behnke, 2025). Overhang has also been observed in New Zealand (five elections between 2005 and 2023) and Romania (notably 2012).

P

Parallel system (MMM). A mixed system in which the SMD and PR tiers operate independently: each party's total is the simple sum of the seats it wins in each tier. Used in Japan, Lithuania, and Ukraine. In the 2026 Hungarian simulation, a parallel system would have yielded TISZA its largest seat share among the four alternatives considered.

Positive vote transfer. A compensation mechanism in which “partial” votes—cast for losing SMD candidates or cast in excess of the winning margin for SMD winners—are aggregated nationally and used to allocate list seats. The signature feature of the Hungarian MCS system between 1990 and 2010. Contrast with *negative vote transfer*.

Progressive proportionality. A pattern in which larger parties' advantage ratios rise with their vote shares (Haman, 2017). Characteristic of systems without seat-level linkage, notably MMM and several MCS variants, in contrast to the near-proportionality generated by MMP with full compensation.

Proportional representation (PR). An electoral system in which seat shares are aligned, by design, with parties' vote shares. First introduced in Belgium in 1899 (Emmenegger & Walter, 2019). PR and majoritarian rule are the two pure models whose combination defines the family of mixed systems.

Proportionality profile. A diagnostic tool introduced by Taagepera and Shugart (1989) that plots each party's advantage ratio against its vote share. The profile reveals at a glance whether a system is broadly proportional, progressively rewards winners, or penalizes small parties. Figure 2 of the article uses proportionality profiles to compare the five mixed-system variants applied to the 2026 Hungarian election.

R

Restricted Jefferson–D'Hondt. A variant of the Jefferson–D'Hondt method in which each party's seat entitlement is capped by its proportional allocation, so that no party can exceed its list-tier share on account of overperformance in SMDs. Used in Scotland and Bolivia, where it eliminates both overhang and orphaned seats (Flis et al., 2025b).

S

Satellite party. In the South Korean context, a separately registered political party closely aligned with a major parent party but contesting only the proportional tier, so as to circumvent the compensation mechanism. Examples include the Citizens' Party of Korea and the Future Korea Party (2020) and the People's Future Party and the Democratic Alliance of Korea (2022). A specific form of *decoy party*.

Scorporo. The Italian mechanism of negative vote transfer applied to Chamber of Deputies elections between 1994 and 2001. For each SMD candidate elected, a number of votes equal to the runner-up's total plus one was subtracted from the affiliated party list's national total, functioning as the “price” of the district victory (Bartolini, 2002). The mechanism was effectively neutralized by *decoy lists* in 2001 and abandoned thereafter.

Single-member district (SMD). An electoral district that returns one representative, typically by plurality rule. The SMD is the constituent unit of the majoritarian tier in every mixed system.

Split-ticket voting. The practice, in two-vote mixed systems of casting one's candidate vote and one's party vote for different parties. Split-ticket rates reached 35.5 percent in New Zealand (2023) and 22.5 percent in Germany (2025) (Burden & Helmke, 2009; Gschwend & van der Kolk, 2006; Plescia, 2016). Systematic split-ticket voting is also a precondition for some trigger-electorate strategies.

Stand-down agreement. An informal arrangement between coalition partners under which one party refrains from fielding candidates in specified single-member districts in order to benefit the other. The agreement between Japan's Liberal Democratic Party and Komeito is the most systematic example: in the 2021 general election, only one or two of the six largest parties competed in more than half of the 289 districts (Maeda, 2025).

T

Trigger electorate. In New Zealand MMP, a single-member district in which a small party, often with the tacit cooperation of a major party, secures an SMD victory that triggers the *coat-tails rule* and brings the party into the House despite its failure to clear the nationwide threshold. Persistent examples include Ōhāriu (United Future/Peter Dunne), Wigram (Progressive Coalition/Jim Anderton), and Epsom (ACT/Rodney Hide, then David Seymour) (Salamon, 2024).

Two-vote system. A mixed-system ballot format on which the voter casts one vote for an SMD candidate and a separate vote for a party list. Dominant in contemporary MMP and in many MMM systems. Contrast with the *integrated (single) vote*.

W

Webster–Sainte-Laguë method. A divisor-based seat-allocation method that rounds to the nearest integer and is markedly less favorable to large parties than Jefferson–D'Hondt. Used for nationwide PR allocation in the German Bundestag since 2009 and in the simulated MMP variant of the 2026 Hungarian election.

Z

Zombie legislator. A legislator who was rejected by voters in a single-member district contest but nevertheless enters parliament via a party list—"resurrected" by the list tier (Pekkanen et al., 2006). The phenomenon extends well beyond Japan: zombies have accounted for roughly one-third of all members of New Zealand's House of Representatives across MMP elections between 1996 and 2023, and for more than half of the German Bundestag after the 2017, 2021, and 2025 federal elections.

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Data availability The simulated effects of different mixed systems were provided in Sect. 4.

Declarations

Competing interests None.

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