Chapter 4

Mixed-member systems and mandate divide: when district representation hides under the invisibility cloak of aligned preferences

The design of an electoral system demands a careful balance that accurately reflects voter preferences and upholds the accountability of elected governments (Lijphart 1984; Powell and Powell Jr 2000). While pure majoritarian systems, like single-member districts (SMD), prioritize accountability over representativity, proportional systems swing the other way. Several alternatives bridge these extremes by integrating features from both systems (Carey and Hix 2011). For example, low-magnitude proportional systems or proportional systems with minimum thresholds better mirror voters' preferences without excessively fragmenting the party system. Mixed-member electoral systems (MMS) adopted by countries like Germany, Japan, Mexico, New Zealand, South Korea, or Venezuela are a popular alternative that features dual tiers of MPs (M. S. Shugart 2001). In these systems, voters elect both district MPs via SMDs and list MPs through proportional representation (PR). Post-communist nations from the 1990s onwards, including Hungary, Lithuania, the Russian Federation, and Ukraine, have shown a marked preference for MMS when reforming their electoral systems. More recent discussions about electoral reforms still suggest that MMS's popularity has not vanished. For instance, in 2019, Quebec considered adjusting its SMD system to accommodate additional proportionally-elected MPs from low-magnitude districts, while Costa Rica leaned toward a German-inspired model. Earlier, in 2017, French President Emmanuel Macron mentioned a potential reform adding 100 proportionally-elected party-list representatives.

However, the effectiveness of MMS in melding elements of both proportional and majoritarian systems remains disputed. The mandate divide theory posits that

representatives seeking re-election adapt their behavior to match the preferences of their pivotal electorate, as defined by the electoral system. When two electoral systems coexist, the behavior of MPs elected under each should diverge, leading to the so-called mandate divide. The Competing Principal Theory (Carey 2007) views representation as two intricate principal-agent problems. An MP responds to two principals: the constituents and the party. When these principals clash, MPs must align with the one most influential in securing their re-election, and this allegiance is determined by the electoral rule.

Reelection under PR requires being ranked high enough on the party list. List MPs are hence incentivized to please the party and abide by the party line in parliament. Conversely, reelection in SMD requires winning the local political contest. District MPs should accordingly rather follow their constituents' preferences. The co-existence of these logics has led scholars to formulate the expectation of a mandate divide between the two tiers of MPs, who should behave differently. Empirical evidence is, at most, mixed, and behavioral discrepancies are irregularly observed. In this paper, I argue that the observability of the mandate divide is conditional on a preferential conflict between an MP's constituents and her party. When the two selectorates have aligned preferences, the divide vanishes behind an invisibility cloak. This conditional observability explains why scholars have difficulties systematically observing a behavioral divergence between list and district MPs. In the rest of this paper, I formulate a conditional theory of mandate divide, which argues that district MPs only behave differently than their list counterpart when a preferential conflict exists between their constituents and parties. I test the theory using novel data on Germany, which measures both MPs' and constituents' ideological positions in Germany. The findings suggest that (1) district MPs are, on average, ideologically closer to their constituents that list MPs, and (2) district MPs are more likely to vote against their party when the ideological distance between their party and constituents increases. This last effect is not existent for list MPs. Overall, the findings confirm the co-existence of local and partisan representation in MMS, which also supports classical theory of comparative politics, which generally links types of electoral systems with specific representatives' behaviors.

4.1 A conditional approach of the mandate divide in mixed-member systems

4.1.1 Electoral systems and legislative behavior

The consequences of electoral systems on the dynamics of representation are perhaps one of the oldest questions of political science. Elections exert two fundamental functions in representative democracies: government control and aggregation

of voter preferences. When voters employ their ballot for retrospective government sanctions, they create incentives for re-election-seeking governments to be responsive to citizens' preferences. At the same, voters can use their ballot prospectively, electing the candidates or parties whose policy platforms align most closely with their preferences. The extent to which elections function predominantly as a retrospective check or as instruments for prospective policy indication often hinges on the electoral system in place. Majoritarian systems typically yield single-party governments endowed with consolidated authority, promoting accountability and amplifying the controlling function of elections. On the other hand, the small number of parties and the presence of strategic voting can dampen the aggregation function of elections in majoritarian systems. Conversely, proportional systems frequently result in coalition governments, dispersing responsibility. Here, pinning down accountability becomes more complex, diminishing the retrospective efficacy of voting. Yet, the multitude of parties inherent to proportional systems bolsters the aggregation aspect of elections.

Electoral systems play a pivotal role in shaping the relationship between constituents and their elected officials. In single-member districts, there is a direct linkage, where a representative is perceived as the voice of only his or her district, with each district having a unique representative. This dyadic perspective sees the representative as a conduit between the local populace and the national government. Essentially, MPs are expected to echo the concerns of their local constituents and act in harmony with them, as their reelection largely hinges on local support.

Conversely, proportional systems offer a distinct model of representation. Instead of having geographically defined groups represented by individual MPs, the collective assembly of elected MPs stands for the entire citizenry. Political rivalry prompts parties to carve out distinct interests in line with the general landscape of political inclinations. In situations where these inclinations are unidimensional and framed within the left-right spectrum, left-leaning parties cater to leftist voters across the country, while right-leaning parties cater to their rightist counterparts. Additionally, this framework provides a platform for niche parties. These parties appeal to specific demographics that have strong sentiments about particular issues unrelated to the conventional left-right spectrum, such as regionalist, environmental, anti-European-Union, anti-migration, animalist, or pension-focused parties. For reelection, these parties must stay attuned to their voters' desires and adhere to the stances of the diverse groups of interest that brought them into office.

However, it's crucial to recognize that these models are predominantly theoretical and may not wholly capture the complexities of real-world politics. While they outline a general rationale, it's an oversimplification to compartmentalize political systems into rigid categories of representation. In practice, various forms of representation often coexist within a single system; for instance, majoritarian sys-

tems may also feature interest-based representation, and proportional systems can have candidates with strong local ties. Nonetheless, the electoral system plays a defining role in tilting the balance between these representation styles and typically emphasizes one over the other.

4.1.2 The mandate divide hypothesis

Mixed-member systems (MMS) are predicated on a seemingly simple concept: marrying the strengths of two ideal-typical electoral systems to achieve a balanced concept representation, combining "the best of both worlds" (M. Shugart and Wattenberg 2001). By integrating both majoritarian and proportional electoral mechanisms, the aim is to strike a moderate balance, aligning closely with the so-called "electoral sweet-spot" (Carey and Hix 2011). Such systems are intended to simultaneously enhance accountability and preference aggregation, with representation drawing from both dyadic and interest-based principles. If the theory is accurate, MPs should exhibit different legislative behaviors, including roll-call voting, parliamentary speeches, and amendment proposals, corresponding to their mandate type and its associated representation logic. A lack of observable differences could indicate (1) contamination effects, where one tier's logic shapes the other's functioning, or (2) the harmonious alignment of party and constituent preferences, making MPs' choices straightforward, as satisfying one principal inherently satisfies the other. This latter notion underscores that the mandate divide is only discernible when party and constituent preferences are misaligned.

Yet, empirical evidence of the mandate divide remains elusive. Numerous studies investigating MMS and looking for behavioral differences between majoritarian and proportional MPs have yielded inconsistent outcomes. Roll-call votes, essential to an MP's representational role, are commonly scrutinized. It's often posited that district MPs, beholden to their local constituents, are more prone to dissent from their party line than list MPs. This trend has been observed in countries like Germany (Sieberer 2010; Stratmann 2006), Hungary (Olivella and Tavits 2014), and Russia (Kunicova and Thomas Frederick Remington 2008; Thames Jr 2001). However, other studies discern no marked differences in the same countries when focusing on different periods (Haspel, Thomas F Remington, and Smith 1998; Ohmura 2014; Thames 2005), or in places like Italy (Ferrara, Herron, and Nishikawa 2005), South Korea, and Taiwan (Rich 2014). A few even report heightened dissent by list MPs (Clark, Martinaitis, and Dilba 2008; Crisp 2007; Jun and Hix 2010). Given that intra-party coordination and partisan discipline heavily influence roll-call votes, they might not be the ideal metric to empirically capture the mandate divide. Beyond roll-call votes, the evidence is scant. In Germany, Zittel, Nyhuis, & Baumann 2019 observed that district MPs are more inclined to pose parliamentary questions pertaining to their constituencies. A field experiment by Breunig, Grossman, & Hänni

2022 discovered that district MPs are twice as responsive to voter queries than list MPs. While these findings complement roll-call voting data, they aren't robust enough to validate beyond any doubt that the mandate divide is an intrinsic feature of MMS.

The literature mentions three different reasons that may explain why it is such a hard challenge to track down the mandate divide empirically: tier contamination, partisan discipline, and conditionality of observability.

The contamination hypothesis states that both tiers of MPs are not independent from each other. It is quite common for MPs to run for election in both tiers. As a result, the future reelection of dual candidates may depend on both their party and their constituents no matter how they were previously elected (Ferrara, Herron, and Nishikawa 2005; Stoffel 2014). Similarly, the majoritarian and proportional ballots simultaneously cast by voters may not be as independent as the theory expects. Voter's party choice sometimes affects their choice of local candidates. Inversely, the local candidate may sometimes influence the party choice. MMS hence places an important cognitive burden on voters, requiring citizens to (1) understand the differing nature of the two ballots, (2) gather independent information on both the local candidates and the national parties, and (3) cast their choice adequately to signal both their local and national preferences. The potential spill-over between the two ballots dilutes and confuses MPs' electoral incentives. Additionally, when the local party branch influences the rankings on the list, it adds a third principal that also blurs the line between the two types of mandates. Such contamination effects can reinforce local or interest-based representation, affecting the balance between the two types of representation.

Even when voters properly set incentives for their representatives, mechanisms of intra-partisan coordination in parliament structurally reinforce the party against individual MPs and constitute an alternative explanation for the irregular observation of the mandate divide. Parliamentary collective decision-making is all about solving collective action problems and P party leaders play a central role in solving both internal and external ones. To avoid the chaotic legislative state of nature, representatives accept to delegate power to a centralized leadership, who institutionally controls the distribution of political capital and strategically allocates it to maximize their party's influence over policies.

Empowered parties are double-edged swords for district MPs. While centralized parties can stifle district MPs, limiting their ability to represent their district, they can also empower MPs to more effectively champion their constituents. In fact, leaders may even use district MPs' rebellion strategically to fit the preferences of a heterogeneous and geographically clustered electorate. For instance, Labor MPs in Scotland, facing a distinctly left-leaning electorate, are afforded greater flexibility by party leadership to optimize electoral outcomes both within and outside Scotland.

A third explanation arises from Sieberer & Ohmura 2021, who propose a conditional theory of the mandate divide, where the divide's visibility is contingent upon the local political landscape. MPs subjected to local electoral vulnerability might be more attuned to local sentiments, which reinforces their incentives to align their behavior with constituent preferences.

To summarize, while contamination effects cast doubt on the presence of distinct MP incentives, the latter theories acknowledge the inherent power asymmetry that rules the reciprocal delegation between MPs and their parties. Both institutional and political contexts might modulate MPs' navigation between party-driven centripetal and constituent-driven centrifugal forces. The following section introduces a fourth explanation for the irregular observation of the mandate divide. In a nutshell, I argue that the divide only becomes discernible in the presence of preference conflicts between the party and the constituents. If both actors hold congruent preferences, the centrifugal and centripetal forces pull in the same direction and call for the same legislative behavior. In this case, the mandate divide remains present but is empirically invisible.

4.1.3 Preferences conflict conditions the observability of mandate divide

Previous contributions examining roll-call vote behavior in Mixed-Member systems remain vague about the alignment of preferences between parties and constituents. Some studies avoid this question, and others anticipate competing demands to periodically happen across all decisions taken by an MP. For instance, Sieberer & Ohmura 2021 acknowledge that "in the context of strong and ideologically cohesive parties, competing demands [...] should be the exception rather than the rule", yet they concede that these conflicts "are bound to occur occasionally". However, they fail to elucidate the conditions prompting such conflicts. In his seminal paper on electoral incentives, Carey 2007 also places these conflicts at the center of his Competing Principal Theory: "when more than one actor (principal) controls resources to influence legislators' votes, divergence in the demands of these principals will reduce legislative party unity". But again, he assumes that such competing demands occur without further discussion of their nature or frequency.

(When) do local constituents and parties have competing demands?

Broadly, elections promote some degree of alignment among the preferences of MPs, their parties, and constituents. After all, voters seldom support candidates or parties with opposing views, thereby minimizing potential disagreements. Furthermore, on many issues, constituents likely have vague or non-existent preferences. In fact, partisan motivating reasoning suggests that citizens derive their policy preferences from their party affiliations and adopt the preferences they expect to be aligned with their party identification. The precision of local constituents' prefer-

ences is likely to be fostered for (1) important pieces of legislation that enjoy increased media attention -e.g. legalization of same-sex marriage- and (2) field-specific legislation affecting large and organized groups in the constituency - e.g. agricultural reform in rural constituencies -. Thus, most constituents will likely have firm preferences on only a few pieces of legislation annually and the general ambiguity of citizens' preferences further diminishes the potential for conflicting demands.

Given that most research centers on roll-call votes, it's pivotal to understand the triggers for such votes. In most legislatures, roll-call votes are not mandated by default and are strategically initiated by politicians (Hug 2010; Ainsley et al. 2020b). The visibility of the mandate divide on roll-call votes is not just about the likelihood of conflicting demands but also their prevalence in roll-call voting scenarios. Leaders use roll-call votes as coercion instruments to put pressure on their members.

If policies, receiving high levels of media attention, are more likely to confront MPs with competing demands, they are also more likely to be grid-locked by party leaders. Especially when a roll-call vote is triggered, it increases the overall stakes and encourages leaders to invest additional resources to maintain party unity. Accordingly, media attention bolsters both centrifugal and centripetal forces, so that even for such policies observing a mandate divide can hardly be systematically expected. In situations involving domain-specific legislation and influential interest groups, the pressure on district MPs may also affect parties and list MPs, blurring the behavioral split between the two types of MPs.

Roll-call votes, however, represent just one avenue for MPs to convey their stances to constituents and formulate representative claims. Since varied reasons can justify "Yays" and "Nos", votes are inherently simple and ambiguous signals. Both leaders and MPs strategically leverage this ambiguity. Partisan leaders afford more autonomy to dissenting MPs on other types of activities such as explanation of votes, parliamentary speeches, or media outreach. This dynamic establishes a continuous negotiation between leaders and MPs, possibly resulting in an MP voting with the party in exchange for the freedom to express differing opinions elsewhere. This way, leaders avoid costly roll-call vote dissent and MPs can use their auxiliary parliamentary activities to address representative claims to their constituents.

These insights suggest that the likelihood of competing demands, as assumed in earlier literature, may be overestimated. Furthermore, even if such conflicts arise, the behavioral disparity between district and list MPs in roll-call votes may not be evident.

When focusing on roll-call votes in mixed-member systems, the probable preference alignment between parties and constituents creates an invisibility cloak that hides the behavioral differences arising from the co-existing majoritarian and proportional electoral rules. This argument has important consequences for the study of representation in mixed-member systems and delineates two main research direc-

tions.

First, scholars can focus on more complex activities that express more shaded signals sent to the voters. This has the advantage of providing MPs with nuanced communication opportunities that can jointly accommodate their party's and constituent's preferences. Activities like parliamentary speeches, vote explanations, social media engagements, and press releases are less likely to be closely monitored by party leadership and are more prompt than roll-call votes to display the complex representation dynamics induced by the different electoral rules. Indeed, the few studies on MMS that ventured beyond roll-call votes always found behavioral differences between list and district MPs (Kerevel 2010; Pekkanen, Nyblade, and Krauss 2018; Zittel and Nyhuis 2019; Zittel, Nyhuis, and Baumann 2019; Battle 2019; Crisp, Schneider, et al. 2021; Breunig, Grossman, and Hänni 2022).

In parallel, the significance of roll-call votes for representation should not be downplayed. Yet, their study necessitates unraveling the invisibility cloak of aligned preferences. Practically, this involves adjusting empirically for the competing demands of parties and citizens.

In this paper, I follow the second avenue and investigate the mandate divide in Germany, employing (1) a novel expert survey precisely measuring MPs' ideological positions, (2) a multi-level regression with post-stratification, that estimates ideological attitude in German districts, and (3) roll-call data available on the website of the German parliament. These combined measurement strategies yield results in line with the theory of mixed-member systems and underscore the existence of differentiated streams of representation - i.e. local and interest-based -.

On the one hand, the empirical analysis tests whether district MPs' preferences are more aligned with their local constituents than the preferences of their list counterparts (H1). The underlying causal mechanisms remain however ambiguous. These preference convergence might result from local nomination processes - intra-partisan and cross-partisan - or from the strategic placement of district MPs, displaying responsive preferences notwithstanding their sincere preferences. Either way, the enhanced ideological convergence is a non-sufficient but important condition for local representation. Assuming MPs' ideological preferences influence their legislative behavior - which includes roll-call votes and other types of parliamentary activities - the displayed alignment places MPs in a much better position to adequately represent their local constituents.

Hypothesis 1 *District MPs are ideologically closer to their constituents than List-MPs*

Next, I unravel the so-called invisibility cloak and test the extent to which district MPs are more likely than their colleagues elected on the party list to defy the party line. As discussed previously, this relationship is conditioned by the existence of

competing demands (H2). The results substantiate this hypothesis and confirm the conditional nature of the mandate divide.

Hypothesis 2 *MPs are more likely to rebel against their party line (1) when they hold a district seat and (2) when the preferences of their constituents are distant from their party*

4.2 Research design

4.2.1 German electoral system

The empirical analysis focuses on the 19th legislative period (2017-2021) of the German parliament. Germany has one of the oldest MMSs. It is certainly the most paradigmatic example of mixed-member systems and has been previously extensively empirically scrutinized. Originally viewed as a quasi-experimental case for causally examining electoral incentives under majoritarian and proportional electoral rules (Moser and Scheiner 2004; Stratmann and Baur 2002), subsequent studies have identified contamination effects, highlighting the potential spillover between the two MP tiers and complicating causal identification (Crisp 2007). Nevertheless, Germany remains a compelling case for studying MMS. It blends decentralized candidate selection processes with homogeneous parties led by strong leaders. The electoral system integrates proportional and majoritarian seats with compensation mandates. It comprises 299 district MPs and a variable number of list MPs. The number of compensation mandates, designed to balance any disproportionality in the majoritarian tier, has steadily increased over the past decades. The German parliament became one of the largest legislatures in the world, lending high statistical power and being a particularly well-suited case for the quantitative study of legislative behaviors. In addition, Germany's strong parochial identities (Ziblatt, Hilbig, and Bischof 2021) reinforce both the demand for local representation, accentuating the tension between local and interest-based representation

This tension is also amplified by Germany's small and stable party system, characterized by professionalized and institutionalized parties. The increasing proportions of list MPs combined with the near-perfect uniformity in roll-call votes complicate testing the mandate divide hypothesis very challenging. Thus, within the realm of MMS, Germany might be viewed as a least likely case for local representation.

Additionally, German political preferences, both on the supply and demand sides, are mainly organized along a single left-right continuum, simplifying the task of operationalizing the preferences of MPs and citizens. Lastly, the open-data stance of the German parliament offers abundant avenues for collecting data on legislative and electoral behaviors.

The 19th Bundestag was elected on the 24th of September 2017. Following

the election, six parties secured at least one of the 709 seats allocated, and coalition negotiations eventually resulted in a "Grand coalition"between the conservative CDU/CSU and the left-leaning SPD. Together, the government parties controlled 399 seats, representing about 56% of the parliament. The CDU/CSU won most of the direct seats (231 for the CDU vs. 59 for the SPD and 9 for the other parties), and the mandate composition varies extensively across parties. While approximately 93% of the conservative MPs were directly elected, more than 97% of the opposition MPs - formed by the far-right party Alternative for Germany, the liberal party FDP, the environmental Green Party, and the left-leaning party Die Linke - were elected in the proportional tier. The only party with a relative balance between district and list MPs is the SPD, which elected about 39% of its representatives in the majoritarian tier. This unequal distribution of the mandate types across parties creates a confounding risk for the empirical analysis. To address this risk, I systematically test two model specifications: (1) one cross-party model with party fixed-effects and (2) one "SPD-only"model, ensuring that the results also hold within the SPD.

4.2.2 Operationalization

Measuring the political preferences of and the comparative distance between political actors and citizens is undoubtedly one of the most difficult empirical challenges of political science. An ideal test of the two above-mentioned hypotheses would rely on measured policy-specific preferences. Yet, given the current measurement instruments, such an empirical endeavor is not feasible. Actors' preferences exhibit heterogeneous levels of precision across policies and actors, and no existing strategy can precisely capture preferences and their level of uncertainty for an exhaustive set of policies. With these constraints in mind, and to streamline the analysis, I focus on actors' ideological preferences, whose operationalization is already challenging enough. Ideology refers to the projection of political preferences onto a single left-right dimension. Despite certain limitations, ideological positions offer here enough empirical leverage to test this paper's theoretical argument. This is in line with the literature on representation, which often uses ideological positions to capture political preferences.

I employ two different methodological approaches to measure (1) the ideological position of each representative and (2) each district's median ideological position. For MPs, I draw on a novel expert survey design that takes advantage of pairwise comparisons and a custom algorithm to efficiently explore the comparison space. This produces an estimate of the position of each of the 700 members of the 19th Bundestag. For districts' ideological preferences, I use multilevel regression with post-stratification (MRP) and estimate the median ideological position in each of the 299 German constituencies. Upon aligning these two ideological measures, I compute the ideological distances between MPs, their constituents, and their parties.

Figure 4.1: Ideological distribution by parties for the 19. Bundestag
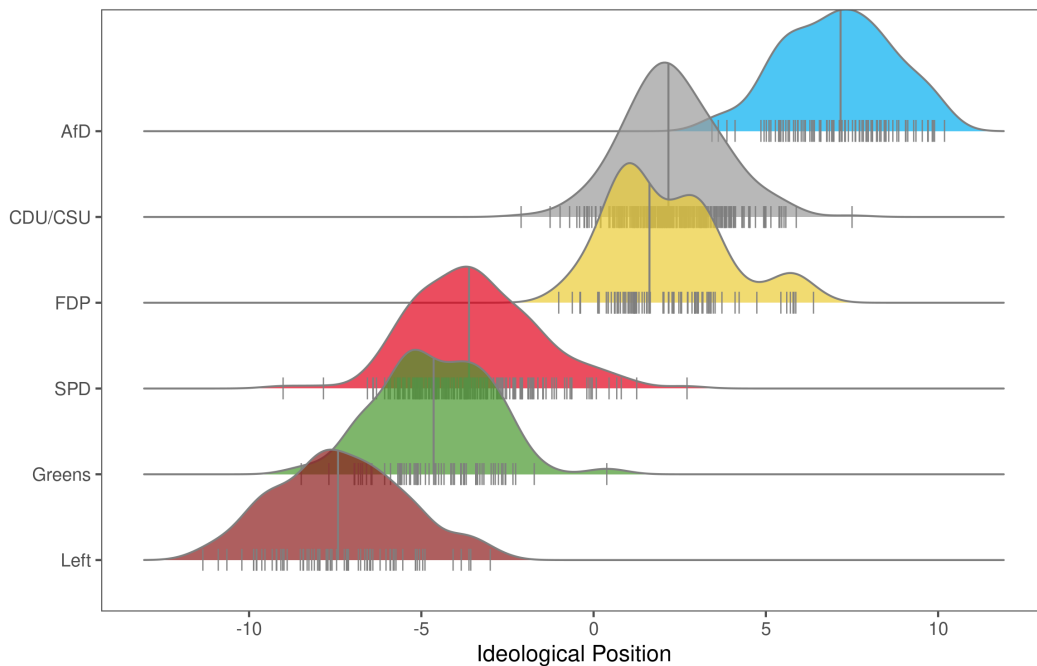
Lastly, I collect data on all recorded roll-call votes on the Bundestag website and utilize it to quantify MP's rebellion behavior.

MPs' ideology

To measure MPs' ideology, I use data from an expert survey run in Germany in the middle of the 19th legislative period (Breunig and Guinaudeau 2023). The expert survey asked executive leaders from the German young partisan organizations to rate 500 pairs of MPs according to ideological criteria. The 24 experts rated more than 11,000 pairs, which were selectively drawn by an algorithm maximizing the amount of information encoded in those pairs. The latent ideological scores underlying these comparisons are then estimated with a Bayesian Davidson model. Eventually, the estimates characterize the ideological position of all Bundestag members and correlate highly with candidates' self-assessments measured by the Comparative Candidate Survey for about 250 MPs.

While the original scale spans from -10 to 10, the estimates for MPs have been centered and adjusted to ensure compatibility with the district estimates. Figure 4.1 showcases the estimated ideological positions for each of the 709 German MPs.

Constituents' ideology

Pairwise comparisons are ineffective in measuring public opinion at the district level, as there is hardly any expert able to compare the preference distributions of two constituencies. Historically, scholars had two main primary alternatives for such measures. Firstly, scholars have employed aggregated proxies like macro-economic

metrics, prior election results, or the proportion of specific socio-demographic groups to measure public preferences at the local level. Although these aggregated measures are widely available across various administrative units, their validity is questionable. The systematic link between these proxies and latent political preferences can be inconsistent, and potentially influenced by unique local dynamics which are not reflected in this approach. An alternative strategy consists in aggregating geolocated and individual survey answers at the targeted level. Despite the validity of individual responses, aggregation can introduce distortion due to selection biases that affect survey participation rates. Moreover, generating accurate estimates demands substantial sample sizes for each geographic segment. While this might be feasible for the 50 US states, typically cited in the literature, it is less so for Germany's 299 electoral districts.

A recent advancement in methodology bridges these traditional approaches, combining geo-referenced surveys with aggregated proxies. Multilevel Regression with Post-stratification (MRP) has emerged as a state-of-the-art strategy to measure public opinion at the local level (Lax and Phillips 2009; Hanretty 2020). MRP harnesses both individual survey responses and publicly accessible aggregate data, offering valid and consistent estimates even for geographic units absent from the individual survey. Notably, it utilizes census information to mitigate the selection biases inherent to surveys. Prior studies have demonstrated MRP's superior performance in comparison to mere proxies or aggregated survey results. Therefore, I used MRP to estimate the ideological median position in each German constituency.

MRP uses three different sources of data in two sequential steps. First, it combines individual survey data with aggregated predictors to estimate one large hierarchical model. Second, the model is in combination with a post-stratification table derived from census data to synthesize the entire distribution of ideological positions within each constituency.

For the individual part of the model, I use data from the 2017 German Election Study (GLES 2019). The sample includes more than 4200 respondents across 171 constituencies. A traditional individual approach would simply compute the average ideological position for each of the 171 constituencies represented in the survey, overlooking 128, and amplifying uncertainties due to a modest average sample size of 24 respondents per district. This would also inadvertently favor certain over-represented socio-demographic groups, skewing estimates towards older and educated citizens' positions.

The GLES survey prompted respondents to place their ideological standing on a scale from 1 (left) to 11 (right), yielding a mode of 6, median of 5, and mean of 5.35. The survey also featured information about participants' respective districts, age categories, gender, and education levels. Incorporating additional individual factors does not enhance the model, as they would be excluded in the post-stratification

step.

Alongside individual data, aggregate predictors play a pivotal role in MRP. They help capture local dynamics and exploit these local dynamics to produce more accurate estimates in geographic units, that are not represented in the individual sample.

Constituency-level predictors improve the estimation of constituency-varying intercepts and of varying slopes for the individual predictors. Without these, unknown constituencies would by default be assigned average values and this rudimentary solution would likely introduce systematic distortions as constituencies are unlikely to be missing at random in the survey.

Aggregate predictors generally sharpen the local estimates. For instance, rural and urban districts may exhibit distinct baselines, which can hence be modeled as a function of the population density. I use two categories of aggregate predictors provided by the German Federal Electoral Officer ('Bundeswahlleiter'): structural demographics and past electoral results. The structural data encompasses various facets of each district, including data on demographics, levels of education, and economic activity. The hierarchical model incorporates the following structural indicators: federal state, population density, GDP, average income, unemployment rate, number of places in kindergarten, number of cars, number of employees, and share of the population receiving social transfers (absolute numbers were normalized for the population). In addition to structural data, the model also included the vote share for the most important parties - CDU/CSU, SPD, and Greens - at the 2013 German legislative election, giving insights into the political context and refining the prediction.

Simultaneously, I constructed a post-stratification table, tallying the population of each district, categorized by age, gender, and levels of education. The 2011 German census does not offer cross-tabulations at the district level. However, these data are available at various local administrative levels (municipalities and administrative districts) and can be mapped along the electoral districts to derive district-specific post-stratification weights. The table includes roughly 20,000 cells across the 300 districts, each representing specific demographic intersections.

Using the previously established hierarchical model, I then estimated the ideological position for each cell in the post-stratification table. These predictions, combined with post-stratification weights available for each cell, allowed me to calculate the median position for each district.

Consistent with spatial voting models, district-level ideological estimates should relate to the electoral results in each district. More specifically, each party's vote share in each district should correlate with the distance between the median district's ideological position and the party's position. Fig 4.2 displays these correlations for the six major parties.

At first sight, the results hold face validity: as the estimated ideological position

of a district becomes more conservative, the CDU/CSU obtains higher vote shares, and the vote share of the left party decreases. The SPD, FDP, and the Greens obtain their highest vote shares in districts estimated in the center, with the FDP peak being slightly more conservative than the SPD's peak and the Green peak slightly more progressive than the SPD's peak. When compared with the raw district aggregation presented in Fig 4.3, MRP's advantages become clear: not only does it fill in data gaps, but it also exhibits a more robust relationship between estimated ideology and electoral results, suggesting enhanced accuracy and reduced errors.

Figure 4.2: Correlation between median district position (MRP) and electoral results in 2017
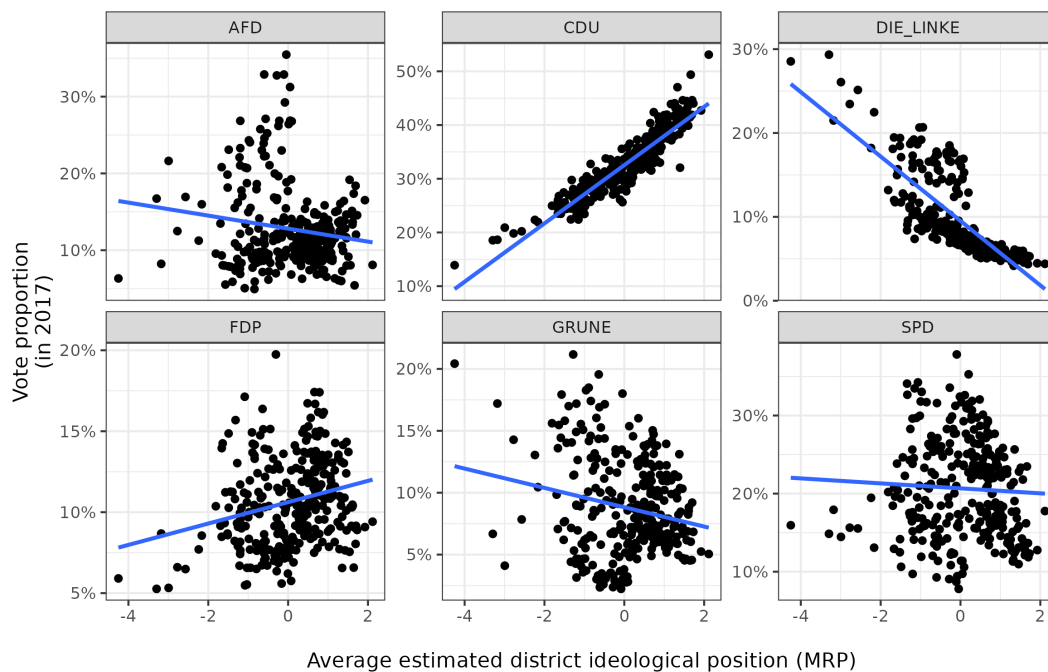
To sum up, I rely on two different methods to estimate MPs' and citizens' ideological positions. MPs' positions were determined using an elite survey featuring pairwise comparison, while districts' positions were estimated with multilevel regression with post-stratification based on individual surveys combined with public aggregated data and census data.

4.3 Results

4.3.1 District MPs are ideologically closer to their constituents than List MPs

Almost all members of the Bundestag - district and list MPs - are tied to a specific district [1]. While district MPs naturally represent the district that elected them,

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[1]There are a few exceptions - less than 10 - of prominent list MPs such as Armin Laschet from the CDU that represent no district in particular.

Figure 4.3: Correlation between median district position (Raw data) and electoral results in 2017

Vote proportion (in 2017)

Average district ideological position (Raw data)
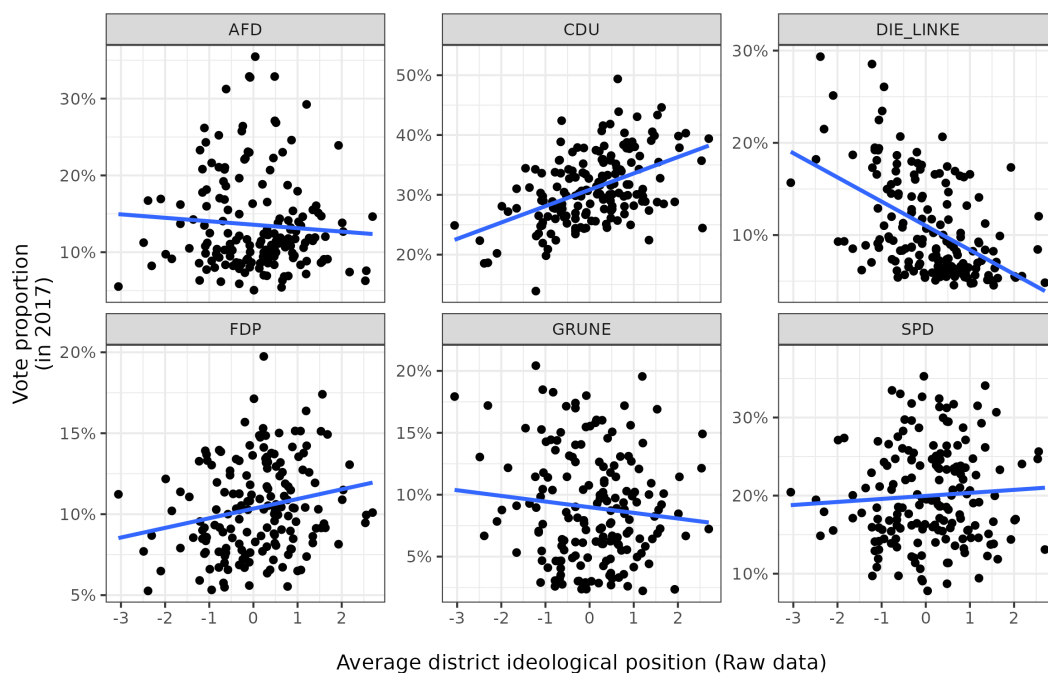
list MPs can choose a district once they are elected. The first question tackled in this study relates to MPs' dyadic responsiveness, defined as the ideological convergence between local constituents and their representative. To do so, I compute the ideological distance between representatives and their constituents. The descriptive results presented in Fig 4.4 support the first hypothesis: in almost every party, with the exception of the AfD, district MPs are, on average, ideologically closer to their constituents than list MPs. This observation is confirmed by the multivariate analysis detailed in Table 4.3.1. Ceteris paribus, district MPs are, on average, closer to their constituents by .47 standard deviations compared to those elected via state lists. As explained earlier, I estimated two models. While the first model includes all parties with party-fixed effects, the second one focuses solely on social-democratic MPs. The consistency in results across both models implies a minimal party-mediated confounding effect, indicating that results are not driven by unobserved party heterogeneity.

The underscored ideological convergence between local representatives and local constituents is a fundamental aspect of dyadic representation. In that sense, the German mixed-member system performs as intended, producing district MPs ideologically close to their constituents. Even with the broader proportionality of partisan representation assured by compensation mandates, mirroring local preferences offers a distinct pathway for local representation.

Nevertheless, the precise mechanisms behind this observation remain ambiguous, and hypothetical causality should be carefully conceived. First, local nomination procedures may explain ideological dyadic convergence. Even if MPs undergo

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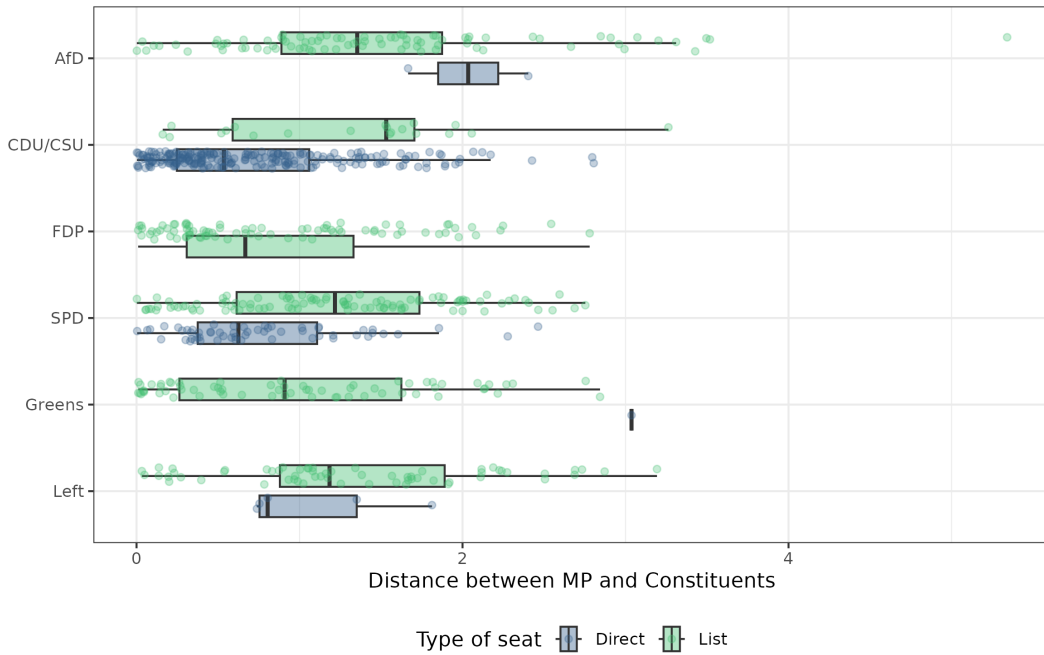Figure 4.4: Ideological distance between MP and District by type of seat

Table 4.1: OLS regression of the ideological distance between MPs and their District

	All parties	Only SPD
List MP (ref: District MP)	0.472*** (0.088)	0.595*** (0.125)
Parties	All	SPD
States FE	X	X
Party FE	X	
Num.Obs.	714	160
Log.Lik.	−728.681	−136.856
F	9.594	3.838

national nomination, it's plausible that national parties strategically position ideologically aligned candidates to enhance local electoral outcomes. Secondly, adhering to spatial voting models, MPs who are directly elected in a district are poised to echo the district's preferences. This reinforces the gap between district and list MPs, as parties do not assign two MPs to the same district. Hence, the electoral link admittedly selects the party or candidates with the closest ideological position. List MPs are then relegated to representing a district that did not elect their party, likely leading to a misalignment in ideological preferences. It is even conceivable that list MPs function as party ambassadors, striving to win over less receptive districts, thereby amassing both local and party-centric political capital. Lastly, strategic adaptability of preferences cannot be excluded: MPs, once assigned to a district, may adapt their priority and preferences to this district to resonate more with this district's preferences.

Either way, the ideological convergence is empirically verified and aligns with

the theoretical expectation regarding representation within mixed-member systems. Yet, descriptive representation does not inherently induce substantive representation. Mere preference alignment does not guarantee effective representation. If an MP is muted and cannot influence policies following his preferences, there is no local representation. Thus, in the following section, I delve into the second hypothesis and investigate MPs' legislative behavior. Specifically, I assess whether MPs actively echo their constituents' preferences during roll-call votes.
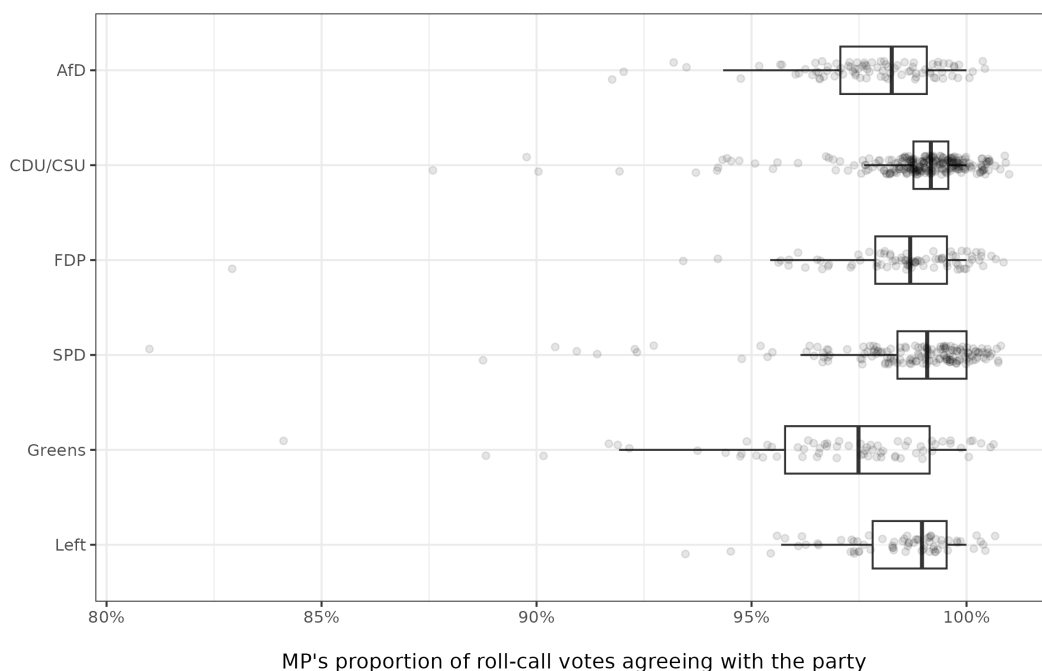
4.3.2 Direct MPs are more likely to rebel when their constituency's preferences are distant from their party

The conditional nature of the mandate divide, as conceived in the theoretical section, expects district MPs facing competing demands to side more frequently with their constituents than list MPs. To test this hypothesis, I utilize the two previously mentioned measures of ideology and combine these with roll-call data systematically collected on the Bundestag's website. In Germany, roll-call votes are not the ordinary procedure to pass bills: to be recorded, roll-call votes must be triggered by a sufficiently large group of MPs, which happens relatively rarely (Sieberer, Saalfeld, et al. 2020). During the 19. legislative period of the Bundestag, 244 roll-call votes were recorded.

To capture MP's defection rate, I compared each MP's individual vote with his party's predominant vote. The vote supported by a majority of the party is deemed as the party line and any vote diverging from it is considered a defection. Fig 4.5 offers a descriptive view of defection rates within parties. At first glance, the striking intra-party uniformity underscores the cohesive nature of German parties. Defection is seldom, with the majority of MPs voting with their party over 95% of instances. Notably, the two governing parties exhibit marginally more discipline than other parties, although discerning a distinct pattern is challenging. The MP that is most frequently in opposition to his party is Marco Bülow, who defected in 23% of the recorded roll-call votes. This observation provides face validity to the party line measure: Marco Bülow is a notable rebellious MP from the SPD, known for advocating parliamentary transparency and holding a secure district seat in Dortmund. He subsequently left the SPD in 2018 for the satirical party "Die Partei" [2].

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[2]https://www.cicero.de/innenpolitik/bundestag-marco-bulow-kritiker-der-eigenen-zunft/52426

Figure 4.5: Partisan discipline by party

MP's proportion of roll-call votes agreeing with the party

Affirming the conditional nature of the mandate divide and broader representation theory in mixed-member systems presupposes an effective dyadic representation. This entails district MPs voting against their party when constituents' views diverge from the party line. The efficacy of MPs hinges not only on the strength of their links with their constituents but also on their capacity to articulate these preferences within the party. While the pronounced discipline indicates that parties exert considerable influence over MPs —especially during roll-call votes— the variability in defection rates suggests MPs possess some discretionary power.

To test the conditional hypothesis, I conduct an OLS regression on individual defection rates. The primary independent variable consists of the interaction between the type of mandate - District vs. List - and the ideological distance between the district and the party. For this distance, parties are located at their median ideological position. Each model incorporates state-level fixed-effect, with the cross-partisan model also including party fixed-effect. As for the first analysis, I first test the argument with all parties before narrowing the focus to social-democratic MPs. The regression results are presented in Table 4.3.1. To facilitate the interpretation of the interaction, Figure 4.6 displays the adjusted predicted defection rate for each mandate type and for varying levels of ideological distance between constituents and parties.

Table 4.2: OLS regression of MPs' defection rate

	All parties	Only SPD
List MP (ref: District MP) [A]	0.003 (0.003)	0.017* (0.008)
Ideological Distance District-Party [B]	0.009*** (0.002)	0.019** (0.006)
[A] x [B]	−0.011*** (0.002)	−0.025*** (0.007)
Parties	All	SPD
States FE	X	X
Party FE	X	
Num.Obs.	712	158
R2	0.162	0.176
R2 Adj.	0.133	0.062
Log.Lik.	1811.798	384.740
F	5.526	1.549

Figure 4.6: Predicted proportion based on the distance between district and party by type of mandate
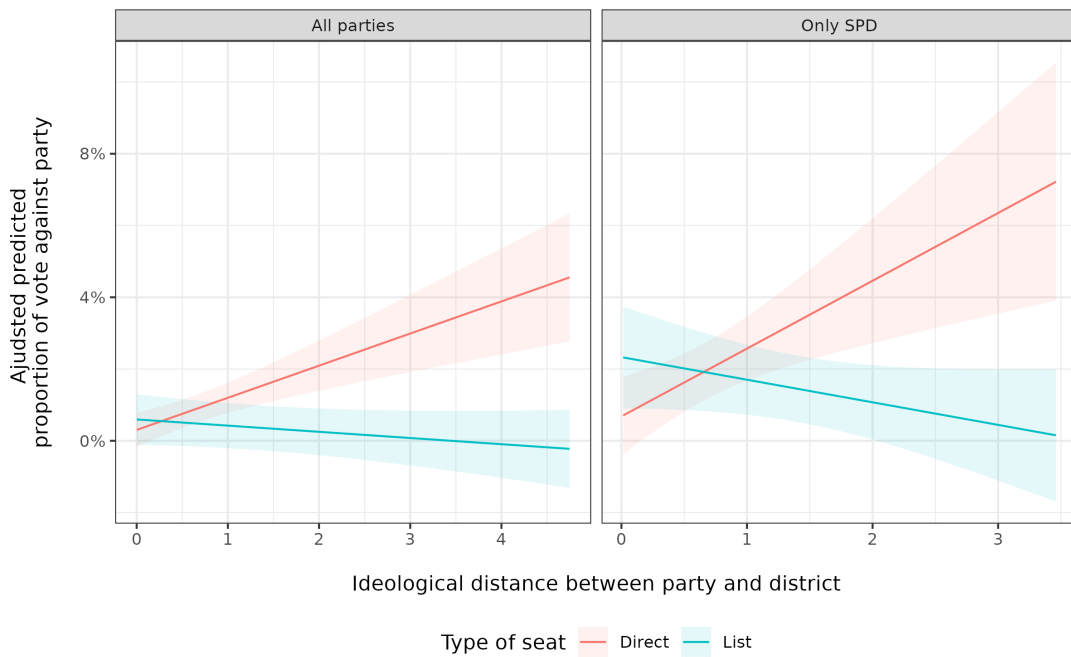
These findings confirm the second hypothesis. While competing demands do not matter for list MPs, they significantly affect district MPs' defection behavior. List MPs' defection rate remains notably low, regardless of the ideological distance between their constituents and parties. Conversely, district MPs' defection rate is similar to list MPs in the absence of competing demands. However, as the ideological gap between constituents and parties widens, defection rates notably escalate. In extreme instances, where the ideological divergence between constituents and parties peaks, the projected average defection rate is approximately 4% (or 7% when solely accounting for the SPD).

These findings can be interpreted in two ways. On the one hand, they bring evidence that district MPs catalyze local representation in Germany. The significant result implies that the roll-call behavior of MPs mirrors their competing demands. While the absolute effect size can be perceived as modest, it becomes consequential once the overall variance in the defection rate illustrated in Fig 4.6 is considered. Given the presence of many factors negatively affecting the defection rate - contamination, strong and homogeneous parties, strong parliaments, most direct mandates belonging to the government, and the strategic trigger of roll-call votes- , the observed effect prove to be substantial.

On the other hand, our incapacity to observe the contra-factual state of MPs's vote in the absence of party pressures makes it hard to formulate a strong conclusion regarding local representation in mixed-member systems. The effect, though present, is undeniably small and questions, rather than proves, MPs' capacity to adequately represent their local constituents. As discussed in the conclusion, these outcomes suggest a subtle shift in perspective might be necessary. Instead of looking for evidence of existing local representation, scholars should focus on quantifying the respective balance between interest-based and local representation.

4.4   Discussion

This paper revisits the established connection between electoral systems and representation, specifically spotlighting mixed-member electoral systems. MMPs are popular electoral rules expected, combining the advantages of both proportional and majoritarian electoral systems. In line with the seminal literature on this system, I extend the mandate divide hypothesis and underscore its conditional nature: MPs elected under different rules only behave differently when they face competing demands from their constituents and party. Utilizing the 19th German parliament as a case study and employing an observational design that integrates two innovative measurement strategies for MPs' and citizens' ideological positions, the findings reveal that district MPs hold preferences more aligned with their constituents than do list-elected MPs. Additionally, when they face competing demands, the two groups of MPs exhibit distinct roll-call behaviors, consistent with the conditional mandate divide hypothesis.

This study makes two pivotal contributions. First, at the theoretical level, it stresses the conditional nature of the link between competing principal theory and legislative rebellion. It confirms a claim that was only latent in previous literature: mandate divide is only observable when MPs face competing demands.

This theoretical extension explains well previous results in the literature that irregularly observe a mandate divide but never control for competing demands. Second, this paper empirically confirms the existence of district representation in

mixed-member systems despite contamination and partisan homogeneity. In doing so, it corroborates the theoretical expectation that mixed-member systems produce differentiated channels of representation. In parallel, these results also speak to the broad literature focusing on the consequences of electoral systems for representation and add evidence to the rich literature suggesting that proportional and majoritarian systems produce different types of representation.

To conclude, the results presented in this paper call to extend research on representation in mixed-member systems in two main directions: a more holistic approach of parliamentary activities and an empirical focus on measuring the relative strength of the different representation channels.

First, in terms of activities, this paper's results, as well as other empirical results from the literature, show that roll-call votes are an important yet problematic behavior to measure how MPs represent their constituents. Roll-call votes are subjected to selection bias, and they consist of crude signals and preclude the voicing of nuanced positions - this is what made roll-call votes appealing in the first place -. In line with more recent studies that look at other types of activities (Zittel, Nyhuis, and Baumann 2019; Breunig, Grossman, and Hänni 2022), I claim that the mandates divide is manifested more clearly in those nuanced activities, such as parliamentary speeches, time spent in the constituency, social media strategies, etc. Scholars should, however, be careful when observing significant behavioral differences between district and list MPs as the mandate divide. The mandate divide assumes the existence of competing demands, leading MPs to support different policies. For instance, let us consider two green MPs supporting the legalization of cannabis. The district MP delivers a speech focusing on his rural constituents, who would locally and economically benefit from growing cannabis. The list MP also supports legalization but for socio-political reasons. In this case, the MPs behave differently (i.e., use different arguments and adopt different focus), but they do not face competing demands and eventually support the exact same decision. Because both the constituent's and the parties' preferences are aligned, the electoral system does not make any difference in MPs' activities. Therefore, I claim that such cases, where MPs behave differently but do not face any trade-off, are not empirical evidence of the mandate divide. Accordingly, when shifting our focus to more complex activities, it is crucial to remember that the mandate divide requires competing demands and that such demands should be controlled for in the empirical analysis.

Second, the presented results highlight the existence of a local stream of representation in Germany. Can we now conclude that mixed-member systems deliver the "best of both worlds"? No. The theory of mixed-member systems expects a balance between majoritarian and proportional representation. Finding evidence of both interest-based and local representation is not enough to conclude MMS delivers on its promises. In addition to the existence of the two streams of representation,

we need to assert their relative importance. This empirical endeavor induces first to acknowledge political decisions, for which the electoral rule under which MPs are elected makes a difference. As mentioned in the last paragraph, if MPs' two principals are not competing, the representation stream does not matter. In contrast, when constituents exert centrifugal forces on MPs, pulling them away from the party line, the party simultaneously exerts centripetal forces, and an equilibrium is found. Normative implications are rather blurry. Still, one overly simple way of conceiving efficient mixed-member systems is to have MPs follow their constituents' preferences half of the time and their party during the other half. If MPs systematically side with their party, but for a few exceptions, local representation hardly exists and is obviously not balanced with interest-based representation.

This idea that the two types of representation delivered by mixed-member systems should be balanced becomes even more important due to the increasing fragmentation of political preferences. Recently, preferences have become more fragmented: new lines of cleavage emerge, and affective polarization reinforces the strength of political preferences. In this context, competing demands are more likely to arise. Logically, increasing the dimensionality of a preference space reduces the likelihood of alignment. MPs in mixed-member systems are accordingly more likely to face a trade-off and the gap between local and interest-based representation is likely to widen. If competing demands only happen once a year for every MP, it does not matter how the MP decides. But if an MP systematically faces competing demands, the balance between the two representation streams becomes crucial. This research avenue is even more important as political fragmentation affects the numeric balance between the list and district MPs - at least in systems with compensation mandates-. In Germany, the Bundestag grew larger and larger in recent years as more compensation seats were required to meet standards of proportional representation. Since no districts were added, the proportion of district MPs shrunk election after election. This evolution also affects the balance between local and interest-based representation and weakens the local representation stream. In conclusion, these contextual elements suggest that electoral rules' representation heavily depends on the political contexts and that scholars should look at the dynamic evolution of representation behavior. Studying the consequences of mixed-member systems requires capturing the relative importance of majoritarian and proportional representation to ensure that the electoral provides a "balanced mix of the best of both worlds" (M. Shugart and Wattenberg 2001).