

UC Berkeley

Working Papers

Title

A Spatial Analysis of Voting in the Korean National Assembly

Permalink

<https://escholarship.org/uc/item/2kf620zf>

Authors

Jun, Hae-Won
Hix, Simon

Publication Date

2006-04-19

UC-BERKELEY

Center on Institutions and Governance Working Paper No. 16



A Spatial Analysis of Voting in the Korean Assembly

Hae-Won Jun and Simon Hix

Institute of Governmental Studies University of California, Berkeley

March 2006

This paper can be downloaded without charge at:
Center for Institutions and Governance Working Papers Series:
<http://igov.berkeley.edu/workingpapers/index.html>

A Spatial Analysis of Voting in the Korean National Assembly

Hae-Won Jun

Yonsei University, Seoul

Simon Hix

London School of Economics and Political Science

28 March 2006

Paper prepared for presentation at the conference on the Comparative Analysis of Legislative Behavior, Del Mar, California, 14-15 April 2006.

1. Introduction

Voting in parliaments is a central process in representative democracies, and most parliaments have had at least some recorded ('roll-call') votes since they were first elected. Nevertheless, research on parliamentary voting has lagged behind research on other democratic processes, such as mass electoral behaviour. Part of this can be explained by a widely-held, yet mistaken, view amongst political scientists that studying voting in most parliaments is rather pointless because party cohesion is so high. Another reason is that parliamentary voting data are costly to use, either because they have to be entered by hand or because it requires a super computer to analyse more than a handful of votes. As a result, research on parliamentary voting focussed first on the U.S. Congress, where party cohesion is comparatively low, data is readily available, and where political scientists had access to super computers.

Since the mid 1990s, however, there has been an explosion of research on voting in parliaments other the U.S. Congress. This was in large part due to the emergence of a new and easily-useable geometric scaling technology developed by Keith Poole and Howard Rosenthal, known as NOMINATE. This new technology also coincided with the increased availability of voting data from other parliaments as a result of the internet and the development of computer power, which has enabled desktop computers to apply scaling technologies to very large voting matrices.

What we do in this paper is contribute to this new research agenda by undertaking a spatial analysis of voting in the Korean National Assembly (KNA). This research is innovative for several reasons. Roll-call votes (called 'electronic votes' in the KNA) were first introduced in the KNA in March 1999, and this paper is the first attempt to study behaviour in these votes in detail. In addition, as far as we know, this is the first spatial analysis of roll-call voting in an Asian parliament. This is also one of the few analyses of

parliamentary voting in an emerging democracy, since most existing work has focused on parliamentary behaviour in more established democracies in North America, Europe, or South America. And, the institutional context of the KNA provides an interesting laboratory for investigating some generalisable theoretical and methodological issues related to voting in parliaments.

This paper starts with several research questions. At an empirical level, we aim to ‘discover’ the main dimensions of conflict in the KNA, the relative locations of the parties and individual KNA members, and how these dimensions and locations change between the 16th and 17th KNA. At a theoretical level, we investigate the impact of three types of institutions on parliamentary voting: parties, the electoral system, and agenda-setting powers. Finally, at a methodological level, we assess which of two geometric scaling methods, NOMINATE and Optimal Classification, works best when a high proportion of votes are ‘lop-sided’, in what Simon Jackman would call an ‘extreme’ roll-call setting (Jackman, 2005).

The rest of the paper is organised as follows. In section two we discuss some general theoretical issues related to how exogenous preferences of parliamentarians translate into a ‘revealed’ behaviour space. In section three we provide some background on elections and parties in South Korea. In section four we present the results from applying NOMINATE and Optimal Classification to the KNA. In section five we use a regression analysis to look at the exogenous ideological and institutional determinants of voting in the KNA. Finally, section six contains a short conclusion.

2. Parliamentarians' Preferences, Institutions and Revealed Voting Behaviour

By scaling parliamentary votes political scientists can measure the structure of the 'revealed behavioural space' in this democratic setting: such as the dimensions of the space, the locations of the parties and individual members, and how these dimensions and locations change over time. However, the 'revealed locations' of the actors are not necessarily the same as their exogenous 'ideal points', and the 'revealed dimensions' are not necessarily the same as the underlying ideological dimensions of conflict in a polity. For example, the number of observed dimensions of voting in parliaments is usually quite low, with the first dimension typically explaining 60-70 percent of the variance, and the second dimension explaining an additional 5-10 percent.

The difference between an 'exogenous preference space' and the 'revealed behavioural space', as measured by scaling recorded votes in a parliament, is a result of two main factors: strategic behaviour, and institutions.

First, rather than expressing their sincere preferences when voting, parliamentarians often behave strategically, such as engaging in log-rolling or position-taking. For example, in many parliamentary systems, extremist members of the governing party often vote with opposition members against the government, which reveals them to be centrist rather than extremist. As a result, the first dimension generated by many scaling metrics in parliamentary systems represents a government-opposition split rather than a continuous left-right ideological dimension (e.g. Noury and Mielcova, 2005; McLean and Spirling, 2003).

Second, a wide range of institutions 'constrain' the ability of parliamentarians to vote sincerely. Such institutions include, *inter alia*, how recorded votes are selected (in many parliaments recorded votes are only a sub-set of votes), how the legislative agenda is set (by the parliament, the government, the majority party leader etc.), the powers of committees

(such as gatekeeping rights), amendment rules (open or closed), the electoral system (e.g. party-centred or candidate-centred), how candidate-selection works (centralised or decentralised), and of course the organisation structure of political parties.

For example, the ability of parties to enforce ‘cohesion’ in parliaments is in part endogenous to the institutions of government. Where executive and legislative powers are fused (in parliamentary systems), parties in government can use vote-of-confidence motions to force their supports to ‘back them or sack them’ (Huber, 1996; Diermeier and Feddersen, 1998). In contrast, in separated-powers (presidential) systems, even if the party controlling the executive has a majority in the legislature, a lack of party discipline does not threaten survival of the executive, and the connection between the performance of a party in government and the re-election prospects of its legislative representatives is indirect (Shugart and Carey, 1992; Tsebelis, 2002).

Nevertheless, even in separated-powers systems, such as South Korea, there are internal incentives for parliamentary parties to form and discipline their members (e.g. Rohde, 1991; Cox and McCubbins, 1993). Parliamentarians could cooperate spontaneously, but this would mean that coalitions would have to be negotiated vote by vote. As a result, politicians who expect to have similar preferences on a range of policy issues can reduce the transactions costs of coalition-building by agreeing a division-of-labour contract: where ‘backbenchers’ provide labour (working out the position of the party on specific issues) and ‘leaders’ decide the overall policy positions of the parties on the main underlying issues, distribute committee and party offices, and communicate detailed voting instructions to the backbenchers.

However, it is not possible to infer from high observed party cohesion that exogenous institutions or powerful party organisations have forced parliamentarians to ‘toe-the-party-line’ against their sincere policy preferences. As Krehbiel (1993: 237) points out: ‘A common form of inference pertaining to the significance of parties in politics goes as follows. A

phenomenon is important. Party is correlated with it. Therefore, party is important – moreover, by implication, in a causal way’. If a high percent of members of the same party vote the same way in a series of votes, the party organisation is assumed to have produced this cohesion. But, if these politicians would have voted the same way because they share the same preferences on the subjects of these votes, the effect of party organisation cannot be determined independently of the politicians’ preferences.

Consequently, one of the tasks of research on voting behaviour in parliaments should be to try to estimate the significance and magnitude of these two intervening forces. For example, in the case of the U.S. Congress, where parties are relatively weak and where position-taking incentives are perhaps evenly distributed across members of Congress, the revealed locations of members of Congress may be very similar to their ideal points (e.g. Poole and Rosenthal, 1997). In many parliamentary systems, in contrast, where parties are highly cohesive and where government-opposition incentives often force opposition parties to take positions in votes that are in conflict with their policy preferences, the revealed locations of members of parliament are likely to be quite different from their ideal preferences.

In this respect, the Korean National Assembly is an interesting chamber for looking at the effects of institutions on parliamentary voting behaviour. First, as in most other democratic parliaments, parties in the KNA try to discipline their members. How far, then, do parties in the KNA force their members to vote against their personal preferences?

Second, the KNA electoral system is a mixed-member system, where a proportion of the members are elected in single-member districts and the rest are elected by party-list proportional representation in one single national constituency. These rules provide different incentives for candidates in the electoral and parliamentary arenas, in that the candidates who are elected in the single-member districts have a greater incentive to appeal directly to voters

than the candidates who are elected on the ‘closed’ party lists (cf. Carey and Shugart, 1995; Mitchell, 2000). So, how do these different incentives influence voting in the KNA?

Third, in the South Korean system, both the president and the legislature can initiate legislation, and the budget is proposed by the president. Whereas during the 16th KNA, the president and the KNA were controlled by opposing parties, in the 17th KNA, the president’s party had a majority in the KNA. As a result, agenda-setting and veto-powers were split between two opposing parties in the 16th KNA, but these powers were united in a single party in the 17th KNA. How did this shift from divided to unified control of agenda-setting power shape the structure of voting in the KNA?

3. Background: Elections and Parties in the Korean National Assembly

In April 2004, South Korea held the seventeenth set of elections to its National Assembly (KNA) (*Gukhoe*). South Korea is a presidential system, in that the president and the unicameral KNA are elected separately, in non-concurrent elections. The president has a five-year term and the KNA has a fixed four-year term. Although presidential and KNA elections have been held since 1948, South Korea is not generally considered to have been fully democratic until 1987. (cf. Diamond and Shin, 2000).

A variety of different electoral systems have been in KNA elections (Croissant, 2002). A single-member-simple-plurality (SMSP) plurality system was used between 1948 and 1958. Then, between 1958 and 1963, the KNA was split into two chambers, and SMSP was used for the House of Representatives while ‘closed’ party-list proportional representation (PR) in one single national constituency was used for the House of Councillors. Despite returning to a unicameral system in 1963, the KNA has since been elected by a parallel, non-compensatory,

mixed-member system, where a certain proportion of members are elected by plurality rule in single or two-member districts and the remaining members are elected by PR in one single national constituency, and where voters cast a single vote (as in Mexico) rather than two separate ballots (as in Germany). In 1973, the system was changed again, with two-thirds of KNA members elected by single-non-transferable-vote (SNTV) in two-seat districts and one-third appointed by the president. Then, in 1981 and 1985, the one-third appointed by the president were once again elected by PR in a single national constituency. However, an additional majoritarian element was introduced, in that two-thirds of the proportional seats were reserved for the party with the largest number of winning candidates in the two-member constituencies.

After the establishment of a more democratic (sixth) constitution in 1988, the elections in 1988 and 1992 returned to a combination of single-member-districts and PR, but with varying proportions of seats elected by SMSP and PR. Also, a ‘winners bonus’ was maintained, whereby if one party won at least half of the SMSP seats, it was automatically entitled to two-thirds of the seats on the PR list, or if the largest party from the SMSP districts gained less than half the seats it was still awarded half of the PR seats.

For the 15th KNA elections in 1996, the winners’ bonus was abolished. This time, 85 percent of seats (253 seats) were elected by SMSP and 15 percent (46 seats) by PR, with parties gaining PR seats if they either won 5 SMSP seats or 3 percent of the total votes in the SMSP constituencies. In the 16th KNA elections in 2000, the total number of seats was reduced to 273, with 227 seats (83 percent) elected by SMSP and 46 seats (17 percent) elected by PR, and with parties gaining PR seats if they either won 5 SMSP seats or 5 percent of the total votes in the SMSP constituencies.

In the 17th KNA elections in April 2004, the electoral system was changed again. This time 243 seats (81 percent) were elected by SMSP and 56 seats (19 percent) were elected

by PR. Also, for the first time votes were given two ballots: one in their single-member district and the other for allocating the PR seats.

Regarding the party system, South Korean politics is dominated by a regional cleavage (esp. Moon, 2005). For example, in the 16th KNA elections, President Kim Dae-Jung's Millennium Democratic Party (MNDP) won 67 percent of the votes and 25 of the 29 SMSP seats in the south-western region (*Honam*), while the opposition Grand National Party (GNP) won 56 percent of the votes and 64 of the 65 SMSP seats in the south-eastern region (*Youngnam*).

Nevertheless, most commentators talk about a 'conservative-progressive' ideological dimension in Korean politics and three distinct ideological traditions (e.g. Hahm, 2005). First, the dominant 'conservative' party is the GNP, although there several other conservative parties obtain seats in the KNA, such as the United Liberal Democrats (LDU). Second, the 'progressive' tradition is mainly associated with President Kim Dae-Jung and his MNDP. However, the largest party in this tradition is now the Uri Party (UP), which was formed as a breakaway from the MNDP. The UP is generally regarded as to the left and more populist than the MNDP. Third, a 'socialist' tradition is further to the left of the progressive parties, and has been mainly represented in recent KNAs by the Democratic Labour Party (DLP).

However, the substantive content of this progressive-conservative dimension is unclear, as it captures several underlying issue dimensions, such as security questions surrounding policies towards North Korea and the United States (a 'dove-hawk' dimension), economic spending and market regulation policies (an economic left-right dimension), and attitudes towards social questions like the rights of women and foreigners in Korean society (a social left-right dimension). Parties and KNA members towards the 'progressive' end of the spectrum tend to support a more dovish ('sunshine') policy towards North Korea and are less pro-American, favour more public expenditure and market intervention, and support liberal

social policies. On the other side, parties and KNA members towards the ‘conservative’ end of the spectrum tend to be more hawkish towards North Korea and more pro-American, favour more free market economic policies, and support more traditional social policies. However, not all parties and individual KNA politicians advocate such clearly correlated positions on these three underlying issue dimensions.

[Table 1 About Here]

Table 1 shows the party-political make-up of the 16th and 17th KNAs. The 16th KNA was dominated by the conservatives, with the GNP the largest party and the conservative parties collectively controlling a majority of seats. However, the conservatives could not dominate the KNA in this period. First, this was a period of divided government, where the progressives controlled the presidency. Until 2003, the presidency was held by Kim Dae-Jung from the MNDP. Then, in the December 2002 presidential election, the MNDP candidate, Roh Moo-Hyun, narrowly defeated the GNP candidate, Lee Hoi-Chang. Second, there were some dramatic party splits and re-alignments in the 16th KNA. Most notably, frustrated with the MNDP and eager to create a legacy independently of Kim Dae-Jung, President Roh established the Uri Party, with initially 47 of the then 115 MNDP members. A few of the remaining MNDP members joined the GNP and almost half of the members of the other main conservative party, the LDU, joined the GNP. The GNP then held 53 percent of the seats in the KNA, with most of the remaining members divided between the two progressive parties, the old MNDP and the new UP.

The 16th KNA was also marred by bitter battles between the GNP in the KNA and President Roh. The GNP were vehemently opposed to Roh’s policies towards North Korea and his ambitious public spending plans. They also accused his administration of

incompetence and illegally interfering in the election campaign for the April 2004 KNA elections (the Korean constitution forbids the president from campaigning in KNA elections). On 12 March 2004, the KNA voted by 193 to 2 to impeach President Roh, and he stepped aside. Roh's UP members had blocked the speaker's podium for several days to prevent a vote. However, the UP members eventually decided to abstain in the vote, as they realised that the impeachment crisis was beginning to play into their hands, as public support for Roh rose sharply during the showdown. The UP then swept the 17th KNA elections in April 2004, winning 152 (51 percent) of the 299 seats, and the Korean Constitutional Court overturned the impeachment decision in May 2004. Roh returned power, and this time he controlled a majority in the 17th KNA.

The way the KNA is elected and the story of the 16th and 17th KNAs consequently suggests some interesting things to consider when looking at roll-call voting in the KNA. Specifically, do KNA members elected in single-member districts behave differently from KNA members elected on PR lists? Were the party splits in the 16th KNA driven by ideological interests or strategic/institutional considerations? And, how did the shift from divided to unified government between the 16th and 17th KNAs alter voting in the chamber?

4. Application of NOMINATE and Optimal Classification to the KNA

We collected all the roll-call votes in the KNA since the introduction of recorded votes in June 2000 until the end of July 2005. The votes were entered by hand by from the printed voting records of the KNA. The number of roll-call votes increased dramatically between the 16th to the 17th KNA. Whereas there were approximately 130 roll-call votes per year in the 16th KNA, there were over 550 roll-call votes in the first year of the 17th KNA. However, as

Table 2 shows, in both sessions of the KNA, the overwhelming majority of roll-call votes highly ‘lop-sided’. In the 16th KNA, 87 percent of votes had majorities of 95 percent or greater. In the 17th KNA, the proportion of votes with this size majority or greater declined slightly, to 77 percent, but still remained high compared to most other democratic parliaments.

[Table 2 About Here]

Given the heavily lop-sided nature of roll-call votes in the KNA, and also because of the potential that classification errors are not independent and evenly distributed across legislators and votes (for example, as a result of powerful parties), we decided to apply two different geometric scaling technologies: NOMINATE and Optimal Classification (cf. Poole, 2005). NOMINATE utilises a parametric and stochastic model, and recovers information about individual legislator and roll-call vote characteristics by exploiting the assumption of the probabilistic spatial model that some errors are more likely than others (Poole and Rosenthal, 1997). The method also assumes that classification errors are distributed according to a logistic function, and that errors are independent and identically distributed across both legislators and votes.

In contrast, Optimal Classification derives ideal points by minimising classification errors (Poole, 2000). The main advantage of this method is that no single error or group of errors can bias the overall ideal point estimates. But, using a non-parametric method means that Optimal Classification recovers a rank-order of actors’ ideal points rather than actors’ relative spatial locations. Nevertheless, as Rosenthal and Voeten (2004) show in the case of the French National Assembly, Optimal Classification can produce more reliable ideal point

estimates than NOMINATE in environments where voting errors are not independent or evenly distributed across legislators and votes.

It is standard practice when applying NOMINATE or Optimal Classification to exclude roll-call votes where the majority size is greater than 97 percent. However, as this would have excluded a large number of votes in the KNA, we set the cut-off point at 99.5 percent. This had no significant effect on the ideal point estimates for the individual KNA members. However, increasing the cut-off point allowed a greater number of roll-call votes and KNA members to be scaled.

[Table 3 About Here]

Table 3 compares dimensionality in the KNA, as measured by NOMINATE, to dimensionality in several other chambers where this method has been applied. There are two things worth noting here. First, as with most other chambers, voting in the KNA is predominantly one-dimensional, with the second dimension recovered by NOMINATE only explaining a small additional percentage of vote decisions or reducing classification errors by a small amount. Nevertheless, as measured by the Aggregate Proportional Reduction of Error (APRE), the second dimension explains slightly more variance in the KNA than in most other chambers. Second, a two-dimensional model provides a clearer picture of the 17th KNA than of the 16th KNA, in that the total amount of variance explained by two dimensions is higher for the 17th KNA than for the 16th KNA.

[Figure 1 About Here]

Figure 1 compares the NOMINATE and Optimal Classification results for each of the two dimensions. The KNA member locations on the first dimension recovered by both methods are highly correlated for both the 16th and 17th KNAs. Interesting, in the 17th KNA, the KNA members on the left are more dispersed under NOMINATE than under Optimal Classification, and hence the relationship between the 17th KNA dimension 1 coordinates from NOMINATE and Optimal Classification is captured better by a quadratic rather than a linear function. Nevertheless, the high correlation between the NOMINATE and Optimal Classification estimates for the first dimension in both sessions of the KNA suggests that the substantive meaning of the first dimension is the same for both scaling methods.

In contrast, the KNA member locations on the second dimension recovered by the two methods are far less correlated in both the 16th and 17th KNAs. There is a significant relationship between the NOMINATE and Optimal Classification coordinates on this dimension but the magnitude of the relationship is low: .481 for the 16th KNA and .436 for the 17th KNA. This consequently suggests that the substantive meaning of the second dimension recovered by the two methods might be different.

[Figure 2 About Here]

However, these correlations between the NOMINATE and Optimal Classification coordinates do not tell us anything about the stability of the two dimensions between the 16th and 17th KNAs. Figure 2 consequently compares the locations on each dimension of those KNA members who were present in both sessions of the KNA. The high correlation of members' locations on the first dimension in the 16th and 17th sessions using both NOMINATE and Optimal Classification suggests that the substantive meaning of the first dimension is the same in both sessions of the KNA. However, there is almost zero correlation

between the KNA members' locations on the second dimension in the 16th and 17th KNA, regardless of whether NOMINATE or Optimal Classification is used. This suggests that the substantive meaning of the second dimension changed between the 16th and 17th sessions.

Figure 3 presents the two-dimensional 'maps' of the location of the KNA members in the 16th and 17th KNA, as measured by NOMINATE and Optimal Classification. Each KNA member is indicated by a single point, and coloured according to his or her party affiliation. The figures also shows the KNA members who switched parties during the 16th or 17th sessions.

[Figure 3 About Here]

The maps suggest several things. The first dimension in both parliaments appears to be the progressive-conservative dimension, with the UP furthest to the 'left', the MNDP in the 'centre', and the GNP furthest to the 'right'. The second dimension might also be an ideological dimension, as the most left-wing party, the DLP, is at the top on this dimension in the 17th KNA, as measured by NOMINATE.

Second, the maps reveal a significant shift in the structure of inter-party voting between the 16th KNA and the 17th KNA, where voting was considerably more fragmented in the 16th KNA but then become essential bi-polar (split between UP in 'government' and MNDP and GNP in opposition) in the 17th KNA. One change between the two sessions was in the structure of the party system, as a result of the UP breaking away from the MNDP. However, after the formation of UP, the three main parties (UP, GNP and MNDP) were the same in the 16th and 17th KNA. Meanwhile, the electoral system and the substantive issues on the agenda of the KNA remained constant across these two sessions of the KNA. Nonetheless, the main exogenous institutional change between these periods is the shift from

divided government in the 16th KNA to unified government in the 17th KNA, as discussed. This shift would have had a significant effect on agenda-setting in the KNA. In the 16th KNA, both the majority party in the legislature (GNP) and the party controlling the presidency (MNDP then UP) had the power to propose legislation. In the 17th KNA, in contrast, agenda-setting power was monopolised by UP. Hence, whereas in the 16th KNA, neither party was able to restrict legislative initiatives, in the 17th KNA, UP could effectively monopolise the agenda. The result, the maps suggest, was a fragmented agenda in the 16th KNA and a clearer government-opposition split in the 17th KNA.

Third, however, the parties are not as cohesive as one might expect, as there is considerable dispersion in the location of the members of each of the main parties. However, it is worth reiterating that there was a high level of overall consensus in both KNA, as revealed by the distribution of vote-splits (in Table 2), which by-definition means that on most votes the parties are highly cohesive.

Fourth, there are some noticeable differences in the estimates produced by NOMINATE and Optimal Classification. In general, Optimal Classification appears to fit the 16th KNA better than NOMINATE, as a significant proportion of KNA members are pushed to the limit of the unit-space in the NOMINATE plot of this session. Another difference in the 16th KNA relates to the location of the MNDP members on the first dimension. Whereas in the NOMINATE plot of the 16th KNA the MNDP members are predominately located between the UP and GNP members, in the Optimal Classification plot the UP members are located in the middle of the spread of MNDP members. In contrast, the NOMINATE and Optimal Classification pictures for the 17th KNA are similar, except for the location of the DLP members on the second dimension, who are at the top of this dimension in the NOMINATE plot but disappear in the midst of the GNP members in the Optimal Classification plot.

5. Ideological and Institutional Determinants of Roll-Call Voting in the KNA

These maps consequently reveal several things about the locations of the parties, the influence of agenda-setting powers, and suggest some ways of interpreting the substantive meaning of the dimensions. However, ‘eyeballing’ these maps cannot tell us anything about what explains variation in the KNA members’ locations within the parties, such as the role of individual ideological preferences and the effects of electoral institutions on KNA voting, and how far parties are able to constrain these factors. To investigate the determinants of individual-level voting in the KNA, and to provide a more nuanced interpretation of the substantive meaning of the revealed dimensions, we undertake a regression analysis, using exogenous preference-based and institutional variables to predict individual KNA members’ locations and also to predict KNA members’ voting variance from their parties, as measured by NOMINATE and Optimal Classification.

5.1. Model and Variables

Our basic model of KNA members’ voting behaviour is as follows:

$$\begin{aligned} LOCATION_m = & \beta_0 + \\ & \beta_1 PREFERENCES_m + \\ & \beta_2 PARTY_m + \\ & \beta_3 ELECTORAL INSTITUTIONS_m + \\ & \beta_4 SENIORITY_m + \varepsilon_m \end{aligned}$$

where the dependent variable, *LOCATION*, is a vector of two related dependent variables. The first variable is the simple Cartesian location of a KNA member, *m*, on either the first or second dimension recovered by NOMINATE or Optimal Classification. From these scores we calculate a second dependent variable: the ‘revealed distance’ of each KNA member from the median Cartesian location of his or her political group on either the first or second dimension recovered by the two scaling metrics.

Regarding the independent variables, the term *PREFERENCE* is a vector of several exogenous measures of individual KNA members’ preferences, and hence captures the direct relationship between individual KNA members’ underlying ideological preferences and their voting behaviour, as measured by scaling roll-call votes. The data for this variable come from a survey of the members of the 16th and 17th KNA, where each member was asked about their attitudes on a variety of policy questions (J.A. Daily and Korean Party Studies Association, 2002; J.A. Daily and Korean Political Science Association, 2004). The survey of the 16th KNA contained questions on external security, internal security, aid for North Korea, reforming the conglomerates, rights of small shareholders, welfare spending, protection of the environment, private high-school education, gender equality, and capital punishment. The survey of the 17th KNA included these categories and added questions on sending Korean troops to Iraq, participation of labour unions in management, dual citizenship, foreign direct investment, rights of foreign workers, and introducing markets in education provision. On each question, the KNA member were asked to locate themselves on a four-point scale: either strongly in favour of the provision, conditionally in favour, conditionally opposed, or strongly opposed.

From these survey data we created two sets of measures of KNA members’ preferences. First, we undertook a principal-components factor analysis of the responses to all the questions, and calculated the preferences of the KNA members in each session on the

first two unrotated factors produced by the analysis. In the 16th KNA, the first factor explains 35 percent of the variance and the second factor explains an additional 11 percent. In the 17th KNA, the first factor explains 30 percent of the variance and the second factor explains an additional 8 percent. Because the questions relating to security issues and economic issues both load highly on the first factor, we call this dimension of preferences *Factor1 (progressive-conservative)*. Because the questions relating to social policy issues, such as gender equality and law and order, load highly on the second factor, we call this dimension of preferences *Factor2 (liberty-authority)*.

Second, we used the survey responses to calculate three simple additive scales – where we coded each question directionally, and then added the responses on each question. From the responses to the security policy issues (external security, internal security, aid for North Korea, and sending troops to Iraq) we calculated a security dimension (*Dove-Hawk*). From the responses to the economic policy issues (reforming the conglomerates, rights of small shareholders, welfare spending, and participation of labour unions in management) we calculated an economic left-right dimension (*Econ left-right*). And, from the responses to the social policy issues (protection of the environment, private high-school education, gender equality, capital punishment, dual citizenship, foreign direct investment, rights of foreign workers, and introducing markets in education provision) we calculated a social left-right dimension (*Social left-right*).

We recoded the factor-based and additive dimensions so that 0 is at the progressive/left end and 1 is at the conservative/right end. We then re-scaled all the dimensions between 0 and 1, to make it simpler to compare the magnitudes of the relationships between these measures of KNA members' ideological preferences and their revealed spatial locations. There is of course a high correlation between the two factor-score

based dimensions and the three simple additive dimensions. We consequently enter the factor-based dimensions and the additive dimensions in separate models.

In the models that relate to the second independent variable, on the revealed distance of each KNA member from his or her party, we recode these ideological variables as measures of each KNA member's ideological distance from the median member of his or her party. To do this, we use the individual KNA members' locations to calculate the median ideological location of each party in the 16th and 17th KNA, and then calculate the ideological distance of each KNA member from his or her party in each of KNA sessions. The idea, here, is that instead of a KNA member's absolute exogenous ideological preferences predicting his or her absolute revealed location, we assume that a KNA member's personal ideological heterogeneity from his or her party predicts the member's voting variance from his or her party.

The *PARTY* term is a vector of dummy variables for each of the parties in the 16th and 17th KNAs. We estimate separate models with these variables excluded and with them included. The later are hence fixed-effects models. When the party dummies are included, the coefficients on the other independent variables relate to average variance within each party's group of KNA members.

The *ELECTORAL INSTITUTIONS* term represents the effect of electoral institutions on KNA voting behaviour and on each KNA member's voting variance from the median member of his or her party. Here we use a single dummy variable, *Party list*, which takes the value 1 if the KNA member was elected on the PR list and 0 if the KNA member was elected in a single-member district.

Finally, the *SENIORITY* term is a vector of two control variables that capture potential individual-level seniority effects. The first variable, *Times elected*, is the number of times a member has been elected to the KNA. The second variable, *Age*, is the age of each KNA

member in the 16th and 17th sessions. Presumably, longer-serving and older KNA members are more ‘senior’ in their parties and in the KNA leadership structures, and so are more able to influence the policy positions of their parties and the agenda of the KNA compared to more junior members.

We estimate the models using OLS regression. Descriptive statistics for all the variables are contained in the table in the Appendix.

5.2. Results

Table 4 shows the results for the 16th KNA and Table 5 shows the results for the 17th KNA. The main findings are as follows. First, regarding the substantive content of the main dimension of voting, KNA members’ preferences on the general progressive-conservative dimension of Korean politics are highly significant in both sessions of the parliament, regardless of whether NOMINATE or Optimal Classification is used to measure their voting behaviour. The magnitude of the relationship between exogenous progressive-conservative preferences and revealed voting is also large. For example, in both sessions, a 10 percent movement along the progressive-conservative scale corresponds to an approximately 7.5 percent movement along the first dimension of voting recovered by NOMINATE (from models 1 and 17). KNA members’ progressive-conservative preferences also explain voting variations within parties on the first dimension, as revealed in the models with party dummies.

[Tables 4 and 5 About Here]

Moreover, looking at the three additive exogenous preference scales reveals that security issues are dominant on the first dimension. KNA members’ economic left-right

preferences are significant in the 16th KNA but not in the 17th KNA. Also, in the 16th KNA, the magnitude of the relationship between preferences on economic issues and voting in this parliament is less than one-quarter the magnitude of the relationship between ‘dove-hawk’ preferences and voting.

Second, the substantive meaning of the second dimension is less clear. In the 16th KNA, this dimension appears to relate mostly to social left-right preferences, which are significant in explaining KNA members’ locations on this dimension both between and within parties in this session. In the 17th KNA, in contrast, the second dimension is more associated with economic left-right preferences. Combined progressive-conservative preferences are significant here. However, looking at the three additive scales reveals that although security and economic policy preferences are both significant, preferences on the economic left-right dimension are approximately twice as substantively important as preferences on the dove-hawk dimension. This is the case between parties as well as within parties, as the models with the party dummies reveal.

Third, turning to institutional effects, adding parties raises the explanatory power of the models enormously. For example, in the models of the 16th KNA, the R-squared on the first dimension doubles when party dummies are included in both the NOMINATE and Optimal Classification results. And, in the models of the 17th KNA, the R-squared on the first dimension almost triples when party dummies are included. This consequently suggests that parties were more cohesive in the 17th KNA than in the 16th KNA.

Fourth, the effect of electoral institutions is unclear. In the 17th KNA, for example, members who were elected on party lists were more progressive than members who were elected in single-member districts. However, this simply reflects the fact that the main progressive party, the UP, won more party list seats than the other two main parties, and

hence does not reveal anything about the effect of electoral institutions on the relationship between parliamentarians and their party leaders.

Fifth, the impact of seniority is clearer in the 17th KNA than in the 16th KNA. Longer serving and older KNA members tend to be more progressive than newer and younger KNA members. However, again, this may have more to do with the proportions of younger and older members in each party's cohort of parliamentarians than internal party relationships.

Sixth, the results do not suggest any clear way of determining whether NOMINATE or Optimal Classification fits better in the KNA context. Both methods recover a meaningful first dimension in both sessions of the KNA. However, NOMINATE does slightly better than Optimal Classification in providing a substantive interpretation of the second dimension, particularly in the 17th KNA.

To look at the effects of preferences and institutions on variations within parties, Table 6 shows the results of the models where the dependent variable is the revealed voting variance of a KNA member from the median member of his or her party. First, KNA members' economic left-right preferences are clear determinants of members' variance from their parties on the second dimension in both sessions of the KNA. Interestingly, however, none of the ideological variables are significant on the first dimension in either session of the KNA in these models, which suggests that parties are able to force their members to 'toe-the-line' even when their members have heterogeneous policy preferences.

[Table 6 About Here]

Second, electoral institutions were only significant in the 16th KNA. Interestingly, though, members elected on party lists were *more* likely to vote against their parties than members elected in single-member districts. This is against the expectation that politicians

elected in single-member districts are likely to be more independent from their party leaders than politicians elected on closed party lists.

Third, older politicians were less likely to vote against their parties in both sessions of the KNA. However, the number of times a member was elected had no significant effect.

[Figure 4 About Here]

Finally, the kernel density plots in Figure 4 illustrate the effect of parties on the translation of exogenous preferences into revealed voting behaviour in the KNA. When asked to locate themselves on a series of policy issues, there is considerably overlap in the preferences of the members of the two main parties (UP and GNP). However, in their revealed voting behaviour, the effect of party discipline means that these two groups of parliamentarians are clearly distinct.

6. Conclusion

Despite a high level of consensus in voting in the Korean National Assembly, we find that when contested votes are held, voting in the KNA is predominantly explained by the underlying ‘progressive-conservative’ ideological conflict in Korean politics. Furthermore, the security policy aspect of this conflict, relating mainly to policies towards North Korea and the United States, is more salient than the economic policy aspect of this conflict, which are present but play a less significant role. These ‘dove-hawk’ preferences structured voting in the 16th KNA, in a period of divided government and before the formation of the Uri Party, as well as in the 17th KNA, after President Roh’s UP had won a majority in the assembly.

Meanwhile, there is a second dimension of voting in the KNA. This is clearly present in both sessions of the KNA, but is far less significant than the first dimension. The substantive policy meaning of this dimension changes between the 16th and 17th KNAs. While in the 16th KNA the second dimension related mostly to social policy preferences, such as the rights of women and foreigners in Korean society, in the 17th KNA this dimension related more to economic policy issues, such as welfare spending and reform of the Korean conglomerates.

Furthermore, we find that parties in the KNA are relatively highly disciplined, despite the fact that South Korea is a separated-powers system, where party leaders have few powers to enforce party discipline, and also despite a high level of heterogeneity in the preferences of the members of the main political parties. Competition between the main political parties is a stronger determinant of voting behaviour than either the personal preferences of the individual KNA members or whether KNA members are elected in single-member districts or on party lists. The shift from divided government in the 16th KNA to unified government in the 17th KNA sharpened the partisan structure of voting in the KNA.

Finally, these findings are robust to the use of two different scaling metrics: NOMINATE and Optimal Classification. Nevertheless, we find that the NOMINATE metric provides a slightly more persuasive picture of voting in the KNA than Optimal Classification, mainly because it allows for a clearer substantive interpretation of the second dimension of voting in the KNA.

References

- Carey, John and Matthew S. Shugart (1995) 'Incentives to Cultivate a Personal Vote: A Rank Ordering of Electoral Formulas', *Electoral Studies* 14, 417-439.
- Cox, Gary W. and Mathew D. McCubbins (1993) *Legislative Leviathan*, Berkeley: University of California Press.
- Croissant, Aurel (2002) 'Electoral Politics in South Korea', in Aurel Croissant (ed.) *Electoral Politics in Southeast and East Asia*, Friedrich-Ebert-Stiftung: Singapore.
- Daily, Joong Ang and Korean Party Studies Association (2002) *Survey of the Members of the 16th Korean National Assembly*, Korean Party Studies Association.
- Daily, Joong Ang and Korean Party Studies Association (2005) *Survey of the Members of the 17th Korean National Assembly*, Korean Party Studies Association.
- Diamond, Larry and Doh Chull Shin (2000) 'Introduction: Institutional Reform and Democratic Consolidation in Korea', in Larry Diamond and Doh Chull Shin (eds) *Institutional Reform and Democratic Consolidation in Korea*, Stanford: Hoover Institution Press.
- Diermeier, Daniel and Timothy J. Feddersen (1998) 'Cohesion in Legislatures and the Vote of Confidence Procedure', *American Political Science Review* 92(3): 611-621.
- Hahn, Chaibong (2005) 'The Two South Koreas: A House Divided', *The Washington Quarterly* 28(3) 57-72.
- Hix, Simon, Abdul Noury and Gérard Roland (2006) *Democratic Politics in the European Parliament*, Cambridge: Cambridge University Press.
- Huber, John (1996) 'The Vote of Confidence in Parliamentary Democracies', *American Political Science Review* 90(2): 269-282.
- Jackman, Simon (2005) "'Extreme" Roll Call Analysis', paper presented to the Voteworld conference, Institute for Governmental Studies, University of California, Berkeley, 26 February 2005.
- Krehbiel, Keith (1993) 'Where's the Party?', *British Journal of Political Science* 23: 235-266.
- McLean, Iain and Arthur Spirling (2003) 'UK OC OK? A Note on Interpreting Optimal Classification Scoring for the United Kingdom', Nuffield College Working Papers in Politics 2003-W9, 3 June 2003, Nuffield College: Oxford.
- Mitchell, Paul (2000) 'Voters and Their Representatives: Electoral Institutions and Delegation in Parliamentary Democracies', *European Journal of Political Research* 37, 335-351.

- Moon, Woojin (2005) 'Decomposition of Regional Voting in South Korea: Ideological Conflicts and Regional Benefits', *Party Politics* 11(5) 579-599.
- Noury, Abdul and Elena Mielcova (2005) 'Electoral Performance and Voting Behavior in the Czech Republic', Institute of Governmental Studies, University of California, Berkeley, Paper WP2005-14.
- Poole, Keith T. (2000) 'Non-Parametric Unfolding of Binary Choice Data', *Political Analysis* 8 (2) 211-237.
- Poole, Keith T. (2005) *Spatial Models of Parliamentary Voting*, Cambridge: Cambridge University Press.
- Poole, Keith T. and Howard Rosenthal (1997) *Congress: A Political-Economic History of Roll Call Voting*, Oxford: Oxford University Press.
- Rohde, David W. (1991) *Parties and Leaders in the Postreform House*, Chicago: University of Chicago Press.
- Rosenthal, Howard and Erik Voeten (2004) 'Analyzing Roll Calls with Perfect Spatial Voting: France 1946-1958', *American Journal of Political Science* 48(3) 620-632.
- Shugart, Matthew S. and John M. Carey (1992) *Presidents and Assemblies: Constitutional Design and Electoral Systems*, Cambridge: Cambridge University Press.
- Tsebelis, George (2002) *Veto Players: How Political Institutions Work*, Princeton: Princeton University Press/Russell Sage Foundation.
- Voeten, Erik (2000) 'Clashes of The Assembly', *International Organization* 54(2) 185-214.

Table 1. Elections and Make-Up of the 16th and 17th Korean National Assemblies

Political party (English name)	Abbr.	Ideology	16 th KNA			17 th KNA		
			Votes-% (Apr. 2000)	Seats (start)	Seats (end)	Votes-% (Apr. 2004)	Seats (start)	Seats (July 05)
Hannara Dang (Grand National Party)	GNP	conservative	39.0	133	145	35.8	121	151
Sae Cheonnyeon Minju Dang (Millenium Democratic Party)	MNDP	liberal	35.9	115	62	7.1	9	10
Yeollin Uri Dang (Uri Party)	UP	left-liberal			47	38.3	152	152
Jayu Minju Yonhap (United Liberal Democrats)	LDU	conservative	9.8	17	10	2.8	4	3
Minju Nodong Dang (Democratic Labour Party)	DLP	socialist				13.0	10	10
Minkook Dang (Democratic People's Party)	DPP	liberal	3.7	2	2			
Huimangui Sinhanguk Dang (New Korea Party of Hope)	NKPH	conservative	0.4	1	1			
Other Parties and Independents			11.2	5	6	3.0	3	3
Total			100.0	273	273	100.0	299	299

Source: National Assembly of the Republic of Korea (<http://korea.assembly.go.kr>), Korean National Electoral Commission (<http://www.nec.go.kr>).

Table 2. Distribution of Vote-Splits in the 16th and 17th Korean National Assemblies

Majority size	16th KNA (June 2000-April 2004)			17th KNA (June 2004-July 2005)		
	No. of votes	% of votes	% of scaleable votes	No. of RCVs	% of votes	% of scaleable votes
50-55	7	1.34	3.66	4	.70	1.53
56-60	7	1.34	3.66	3	.52	1.15
61-65	4	.77	2.09	7	1.22	2.67
66-70	6	1.15	3.14	11	1.92	4.20
71-75	4	.77	2.09	13	2.26	4.96
76-80	8	1.54	4.19	6	1.05	2.29
81-85	10	1.92	5.24	19	3.31	7.25
86-90	6	1.15	3.14	15	2.61	5.73
91-95	18	3.45	9.42	53	9.23	20.23
96-99.50	121	23.22	63.35	131	22.82	50.00
99.51-100	330	63.34		312	54.36	
Total scaleable votes	191	36.66	100.00	262	45.64	100.00
Total votes	521	100.00		574	100.00	

Table 3. Dimensionality in the KNA Compared to other Parliaments, using NOMINATE

	Number of scaleable roll-call votes	Number of scaleable legislators	Percent of roll-call vote decisions predicted correctly			Aggregate Proportional Reduction of Error (APRE)		
			dim. 1	dim. 2	dim. 2- dim. 1	dim. 1	dim. 2	dim. 2- dim. 1
16 th Korean National Assembly (2000-04)	191	286	93.4	94.2	.8	32.1	40.0	7.9
17 th Korean National Assembly (2004-05)	262	305	93.5	94.9	1.4	35.3	49.2	13.9
US House of Representatives (1997-98)	946	443	88.2	89.2	1.0	64.4	67.4	3.0
US Senate (1997-98)	486	101	88.0	88.5	.5	64.2	66.0	1.8
French National Assembly (1951-56)	341	645	93.3	96.0	2.7	81.8	89.2	7.4
European Parliament (1999-2005)	5190	687	87.8	90.0	2.2	55.7	63.2	8.5
UN General Assembly (1991-96)	344	186	91.8	93.0	1.2	62.1	67.7	5.6

Note: US House and Senate data from Poole and Rosenthal (1997), UN General Assembly data from Voeten (2000), French National Assembly data from Rosenthal and Voeten (2004), and European Parliament data are from Hix, Noury and Roland (2006).

Figure 1. Comparison of NOMINATE and Optimal Classification Results

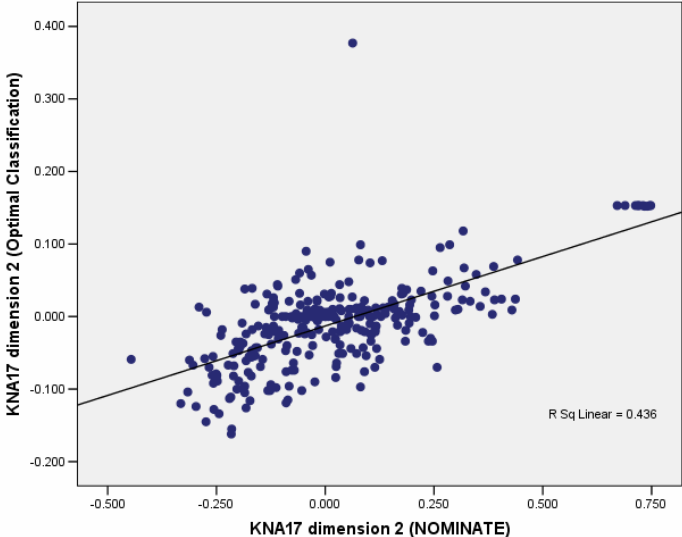
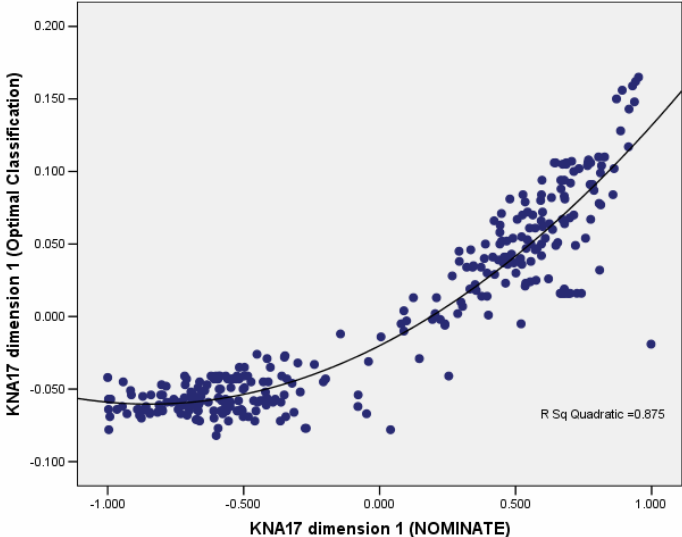
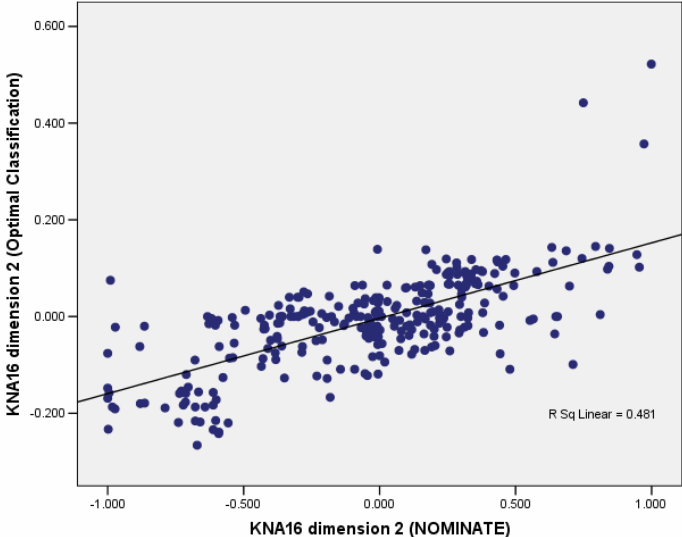
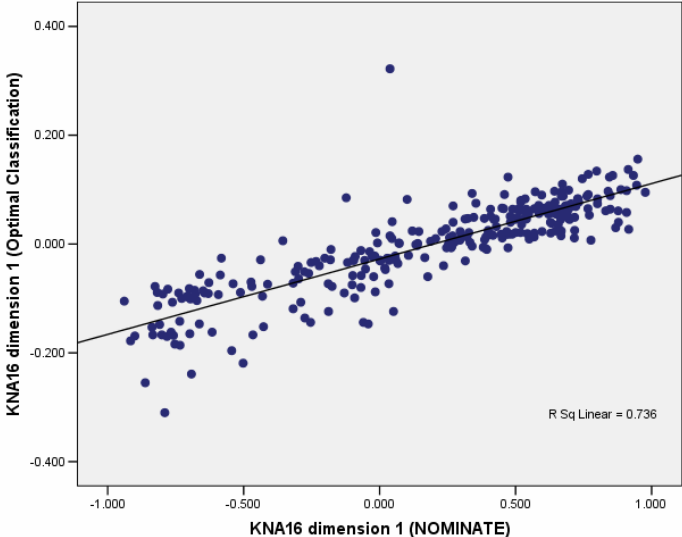


Figure 2. Comparison of Members' Coordinates in the 16th and 17th KNAs

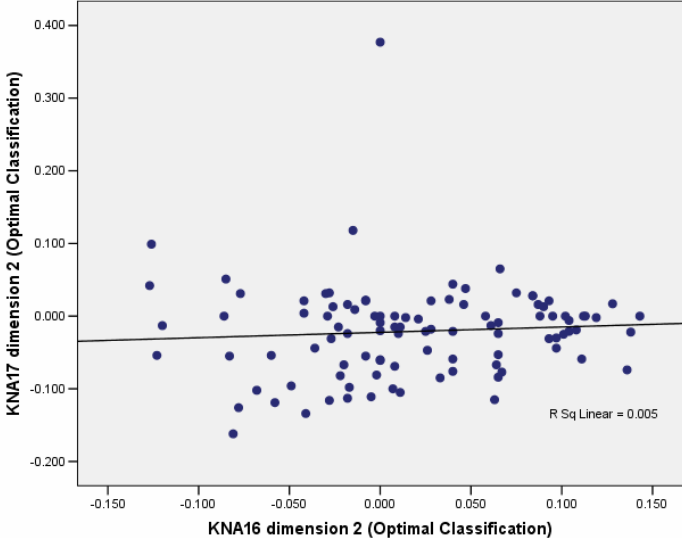
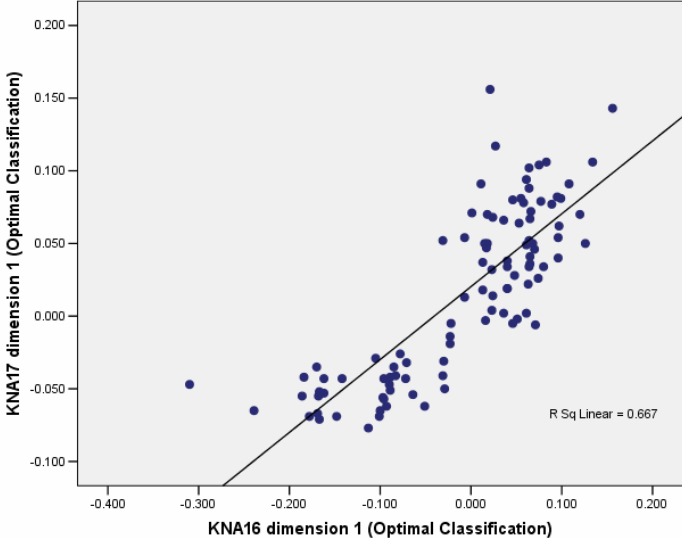
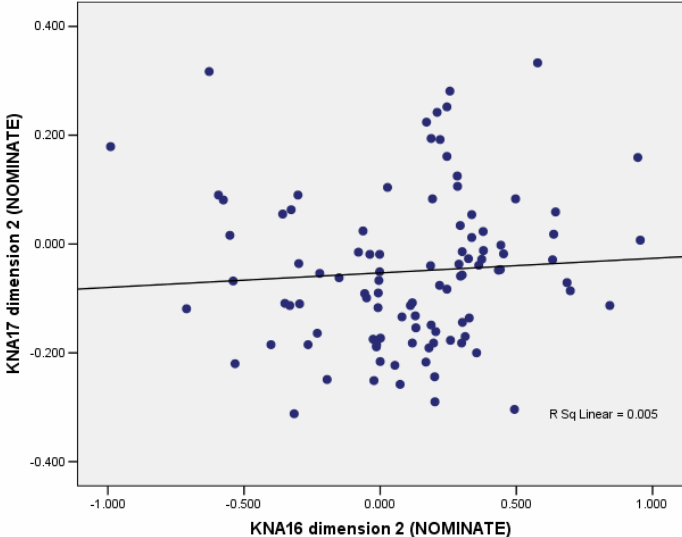
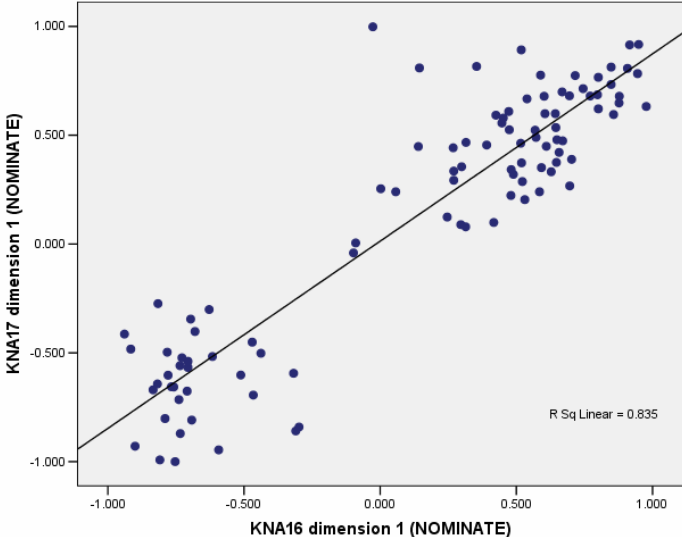
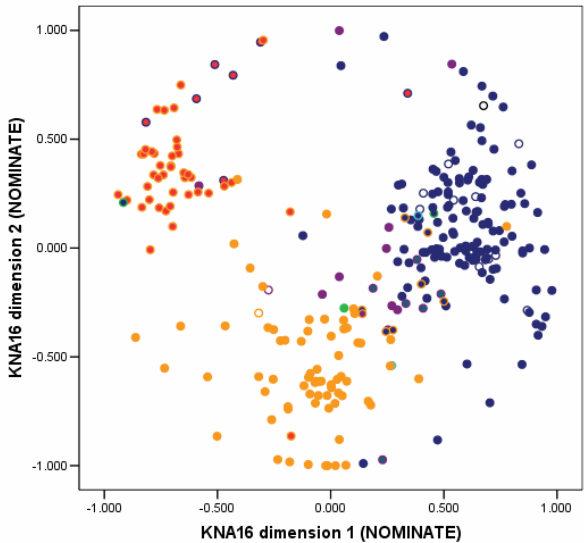
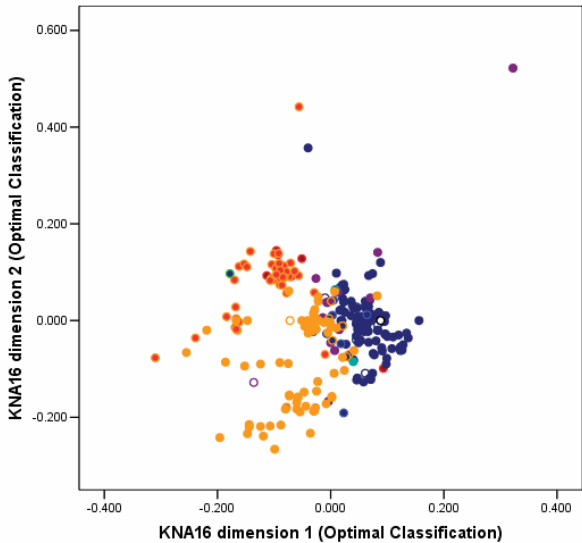


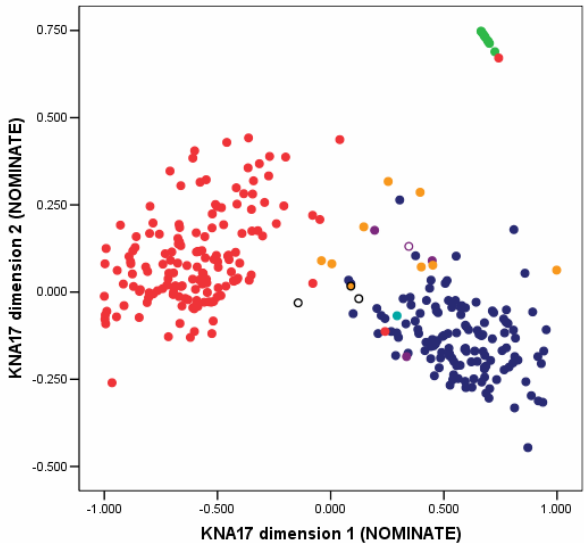
Figure 3. Two-Dimensional Maps of the 16th and 17th KNAs, using NOMINATE and Optimal Classification



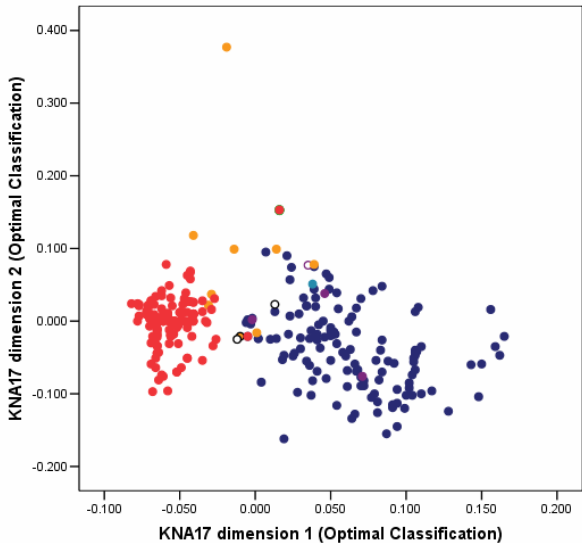
- Party KNA16
- DPP-GNP
 - DPP
 - GNP-NA
 - GNP-UP
 - GNP
 - IP21
 - LDU-GNP
 - LDU-NA
 - LDU
 - NIKPH-GNP
 - NIM
 - NMMDP-GNP
 - NMMDP-LDU
 - NMMDP-NA
 - NMMDP-UP
 - NMMDP
 - PPR-GNP



- Party KNA16
- DPP-GNP
 - DPP
 - GNP-NA
 - GNP-UP
 - GNP
 - IP21
 - LDU-GNP
 - LDU-NA
 - LDU
 - NIKPH-GNP
 - NIM
 - NMMDP-GNP
 - NMMDP-LDU
 - NMMDP-NA
 - NMMDP-UP
 - NMMDP
 - PPR-GNP



- Party KNA17
- DLP
 - GNP
 - IP21
 - LDU-NA
 - LDU
 - NA-NMMDP
 - NA
 - NMMDP
 - UP



- Party KNA17
- DLP
 - GNP
 - IP21
 - LDU-NA
 - LDU
 - NA-NMMDP
 - NA
 - NMMDP
 - UP

Table 4. Determinants of Members' Revealed Locations in KNA16

Dependent variable:	Dimension 1								Dimension 2							
	NOMINATE location				Optimal Classification location				NOMINATE location				Optimal Classification location			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Constant	-.754 (.003)	-.460 (.031)	-.288 (.064)	-.077 (.747)	-.180 (.000)	-.132 (.000)	-.092 (.019)	-.091 (.137)	.489 (.053)	.138 (.529)	-.166 (.455)	-.520 (.128)	.027 (.618)	-.039 (.419)	-.020 (.724)	-.101 (.255)
Factor1(progressive-conservative)	1.525 (.000)		.461 (.000)		.229 (.000)		.071 (.002)		.309 (.030)		.245 (.064)		.020 (.525)		.009 (.785)	
Factor2(liberty-authority)	.156 (.481)		.146 (.202)		.028 (.450)		.041 (.160)		-.522 (.019)		.003 (.984)		-.111 (.022)		-.029 (.491)	
Dove-Hawk		1.395 (.000)		.200 (.082)		.193 (.000)		.015 (.606)		.341 (.071)		.067 (.682)		.026 (.540)		-.020 (.633)
Econ left-right		.350 (.034)		.107 (.210)		.054 (.054)		.022 (.312)		.149 (.379)		.270 (.027)		.033 (.377)		.054 (.089)
Social left-right		.083 (.682)		.271 (.011)		.038 (.280)		.060 (.027)		-.192 (.360)		-.016 (.914)		-.047 (.312)		-.031 (.431)
Party list	.009 (.910)	.013 (.870)	-.059 (.159)	-.072 (.082)	-.005 (.715)	-.006 (.659)	-.014 (.180)	-.017 (.099)	-.100 (.210)	-.088 (.263)	.061 (.309)	.082 (.163)	-.016 (.341)	-.010 (.578)	.002 (.907)	.011 (.472)
Times elected	.012 (.646)	.016 (.514)	.013 (.289)	.014 (.250)	-.000 (.936)	.000 (.988)	-.001 (.802)	-.001 (.804)	.023 (.362)	.017 (.494)	.011 (.547)	.012 (.515)	-.002 (.766)	-.003 (.629)	-.004 (.391)	-.004 (.357)
Age	.000 (.909)	-.003 (.397)	.000 (.946)	.000 (.927)	.001 (.246)	.000 (.830)	.001 (.056)	.001 (.114)	-.008 (.063)	-.005 (.202)	-.001 (.802)	.001 (.801)	.000 (.795)	.001 (.502)	.002 (.054)	.002 (.025)
Party dummies	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Observations	210	221	210	221	210	221	210	221	210	221	210	221	210	221	210	220
Adj. R-squared	.382	.408	.844	.845	.346	.352	.625	.616	.047	.016	.507	.502	.009	-.015	.294	.286

Note: The method is OLS regression. P-values are in parentheses.

Table 5. Determinants of Members' Revealed Locations in KNA17

Dependent variable:	Dimension 1								Dimension 2							
	NOMINATE location				Optimal Classification location				NOMINATE location				Optimal Classification location			
	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
Constant	-.544 (.040)	-.093 (.720)	.543 (.000)	.333 (.038)	-.050 (.055)	-.023 (.356)	.028 (.176)	.014 (.520)	.318 (.000)	.407 (.000)	.737 (.000)	.406 (.000)	.016 (.495)	.061 (.008)	.122 (.000)	.105 (.002)
Factor1(progressive-conservative)	1.498 (.000)		-.121 (.307)		.195 (.000)		.035 (.042)		-.801 (.000)		-.389 (.000)		-.161 (.000)		-.101 (.000)	
Factor2(liberty-authority)	1.074 (.000)		.176 (.094)		.069 (.005)		-.008 (.609)		.258 (.000)		.133 (.012)		.076 (.001)		.036 (.113)	
Dove-Hawk		1.380 (.000)		-.039 (.727)		.148 (.000)	.014 (.391)			-.339 (.000)		-.145 (.010)		-.047 (.042)		-.018 (.456)
Econ left-right		-.400 (.175)		-.170 (.172)		.015 (.592)	.027 (.124)			-.577 (.000)		-.306 (.000)		-.160 (.000)		-.103 (.000)
Social left-right		.488 (.038)		.039 (.647)		.030 (.182)	-.008 (.562)			.081 (.148)		.002 (.961)		.033 (.108)		.009 (.643)
Party list	.380 (.000)	.329 (.002)	.064 (.124)	.047 (.257)	.030 (.004)	.025 (.014)	.005 (.395)	.004 (.449)	.032 (.195)	.058 (.021)	.005 (.811)	.006 (.778)	.010 (.285)	.014 (.142)	-.001 (.898)	-.002 (.842)
Times elected	.059 (.210)	.051 (.262)	-.023 (.197)	-.031 (.079)	.004 (.381)	.002 (.567)	-.003 (.201)	-.005 (.055)	-.013 (.247)	-.010 (.333)	-.004 (.650)	-.001 (.833)	-.004 (.284)	-.004 (.352)	-.004 (.328)	-.003 (.431)
Age	-.016 (.010)	-.015 (.012)	.000 (.934)	.002 (.453)	-.002 (.004)	-.002 (.005)	-.000 (.630)	.000 (.929)	.001 (.520)	.001 (.442)	-.002 (.104)	-.002 (.143)	.001 (.170)	.001 (.312)	.000 (.591)	.000 (.993)
Party dummies	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Observations	182	204	182	204	182	204	182	204	182	204	182	204	182	204	182	204
Adj. R-squared	.278	.270	.899	.898	.349	.361	.804	.806	.652	.634	.780	.774	.356	.356	.462	.472

Note: The method is OLS regression. P-values are in parentheses.

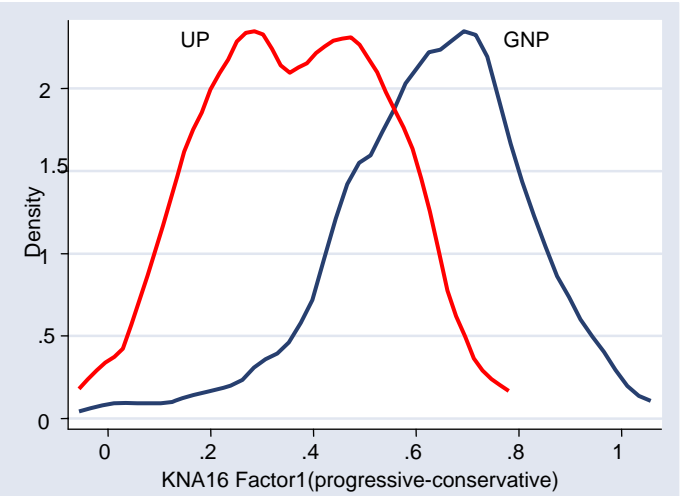
Table 6. Determinants of Voting Variations Within Parties

	16th KNA				17th KNA			
	Dimension 1		Dimension 2		Dimension 1		Dimension 2	
	NOMINATE (33)	Optimal Classification (34)	NOMINATE (35)	Optimal Classification (36)	NOMINATE (37)	Optimal Classification (38)	NOMINATE (39)	Optimal Classification (40)
Constant	.001 (.997)	-.013 (.787)	.182 (.447)	-.013 (.787)	.243 (.002)	.038 (.001)	.174 (.000)	.079 (.000)
Dove-Hawk distance (<i>KNA member's absolute distance from party median</i>)	.073 (.501)	-.002 (.954)	.073 (.619)	-.002 (.954)	.078 (.372)	.006 (.643)	.172 (.001)	.012 (.537)
Econ left-right distance (<i>KNA member's absolute distance from party median</i>)	.048 (.602)	-.008 (.748)	.226 (.070)	-.008 (.748)	.071 (.486)	-.012 (.416)	.221 (.000)	.080 (.001)
Social left-right distance (<i>KNA member's absolute distance from party median</i>)	.129 (.233)	.020 (.501)	.100 (.498)	.020 (.501)	.095 (.196)	.005 (.663)	.005 (.902)	.019 (.258)
Party list	.070 (.022)	.138 (.101)	.097 (.020)	.014 (.101)	.007 (.771)	.003 (.391)	-.003 (.828)	-.005 (.354)
Times elected	.009 (.402)	-.001 (.698)	.001 (.954)	-.001 (.698)	.013 (.201)	.001 (.454)	.000 (.944)	.000 (.865)
Age	-.001 (.368)	.000 (.987)	-.005 (.019)	.000 (.987)	-.003 (.025)	-.002 (.105)	-.002 (.004)	-.001 (.004)
Party dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	221	221	221	221	202	202	202	202
Adj. R-squared	.023	.036	.055	.091	.054	.303	.179	.219

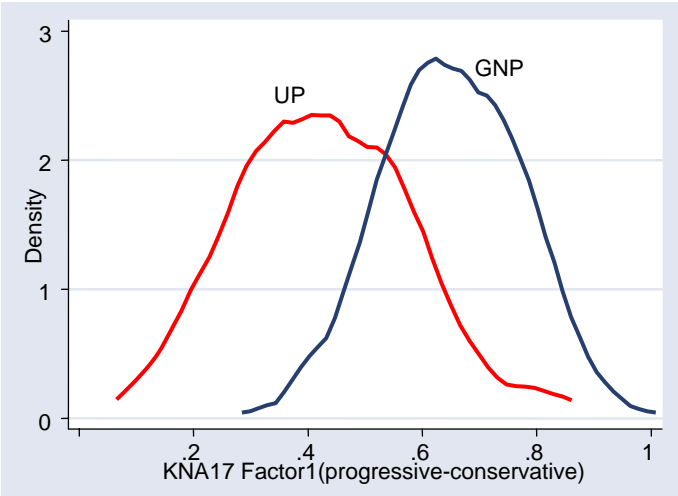
Note: The method is OLS regression. The dependent variable is the revealed absolute distance of a KNA member from the median member of his/her party on the relevant dimension (e.g. NOMINATE dimension 1, Optimal Classification dimension 1, etc.). P-values are in parentheses.

Figure 4. The Party Effect: KNA Members' Preferences and Revealed Locations

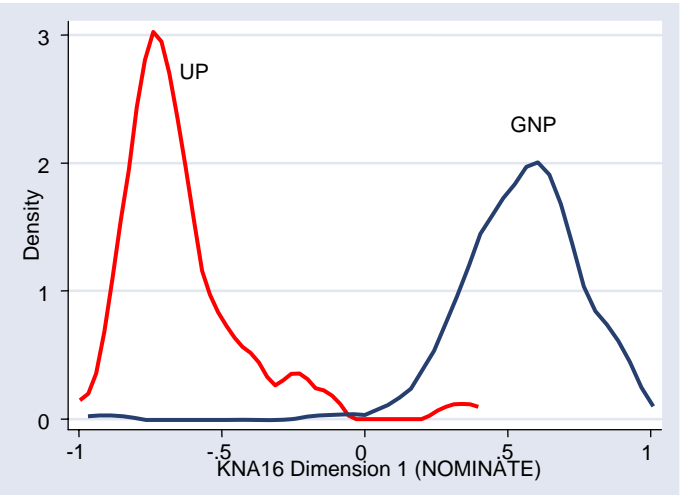
a. Exogenous Preferences KNA16



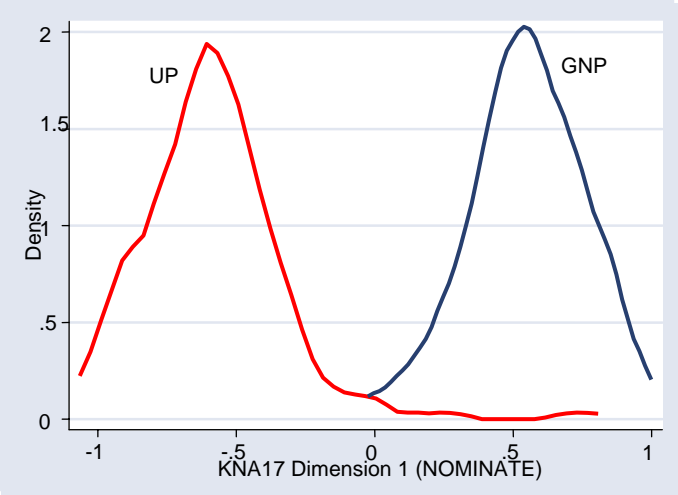
c. Exogenous Preferences KNA17



b. Revealed Behaviour KNA16



d. Revealed Behaviour KNA17



Appendix. Descriptive Statistics

Variable	No. of obs.	Mean	Standard deviation	Minimum	Maximum
NOMINATE dimension 1 KNA16	286	.173	.519	-.939	.977
NOMINATE dimension 2 KNA16	286	-.035	.434	-1.000	.999
OC dimension 1 KNA16	286	-.003	.084	-.310	.322
OC dimension 2 KNA16	286	-.009	.098	-.266	.522
NOMINATE dimension 1 KNA17	305	-.021	.617	-1.000	.998
NOMINATE dimension 2 KNA17	305	.019	.208	-.446	.748
OC dimension 1 KNA17	305	-.001	.063	-.082	.165
OC dimension 2 KNA17	305	-.009	.060	-.162	.377
Factor1(progressive-conservative) KNA16	225	.529	.212	0	1
Factor2(liberty-authority) KNA16	225	.459	.136	0	1
Dove-Hawk KNA16	237	.418	.210	0	1
Economic left-right KNA16	237	.486	.207	0	1
Social left-right KNA16	237	.397	.172	0	1
Factor1(progressive-conservative) KNA17	182	.528	.204	0	1
Factor2(liberty-authority) KNA17	182	.358	.164	0	1
Dove-Hawk KNA17	206	.509	.236	0	1
Economic left-right KNA17	206	.516	.186	0	1
Social left-right KNA17	206	.408	.214	0	1
Party list KNA16	672	.097	.296	0	1
Party list KNA17	672	.086	.281	0	1
Times elected KNA16	237	2.101	1.311	1	9
Times elected KNA17	309	1.65	1.010	1	6
Age KNA16	237	56.620	8.117	36	76
Age KNA17	308	51.078	8.002	33	76