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**Determinants of the influence of voters
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on the political decision making process**

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DETERMINANTS OF THE INFLUENCE OF VOTERS AND INTEREST GROUPS ON THE POLITICAL DECISION MAKING PROCESS

Abstract

This paper provides a comprehensive theoretical model of the political decision making process. Therein two ideologically different political parties compete for power. Their primary instrument in this competition are programmatic concessions in favor of voters and interest groups. As any concession causes losses in utility for the party members, the parties try to win the election with as little concessions as possible. The efficient amount of concessions and their distribution on different groups of voters and interest groups is derived. These concessions are taken as an indicator for the influence of these two groups of political agents on the political decision making process. Hence the political model developed in this paper helps to determine the political influence of voters and interest groups. The illustrations show that the efficient amount of concessions depends on the closeness of the election race. The closer the initial distribution of votes, the more concessions can voters and interest groups wring from the political parties. The characteristics of the political landscape, e.g. the share of informed voters and the degree of ideological polarization, are found to determine the efficient amount of concessions and thus the influence of voters and interest groups on the political decision making process.

Key words: Public Choice, theory, voters, interest groups, election

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1. Introduction

There is a broad consensus among scientists that voters, politicians and interest groups are the primary agents in the political decision making process. At the same time, the degree to which the results of this process follows the preferences of these different agents is controversially discussed. The wide dispersion of answers results from the fact that the numerous theoretical and empirical articles on this topic differ in their primary focus. Most of the articles focus on only two of the three groups of agents named above. They describe their characteristics and structure and provide insight into the process and results of their interaction. So far there is still a shortage in theoretical models that incorporate all three groups and at the same time account for their main structural characteristics.

This paper combines a number of existing approaches (especially Denzau and Munger, 1986, Coughlin et al., 1990, Congleton, 1991, Mueller and Stratmann, 1994, Grossman and Helpman, 1996) and adds some new elements in order to develop a more comprehensive model of the political decision making process. It places two political parties as primary agents in the centre of the analysis. Their aims and characteristics are shortly reviewed in section 2. In their struggle for power, they make programmatic concessions and engage in campaigning in order to manipulate the other agents involved in the political process. The voters are the first addressees of their activities. Section 3 characterizes this group of political agents and shows how it can be divided into different target groups. Assuming that both parties use their instruments efficiently, first conclusions about how a political party will distribute its campaigning effort and concessions across these different target groups are drawn. Section 4 introduces interest groups and shows how different types of interest groups are courted by the political parties. The fifth section combines the major findings from the previous passages and models the parties' competition for power in a game-theoretic model. By deriving and analysing possible political equilibria, first answers to two questions are given: First, how much concessions are the political parties forced to make in their election campaign? Second, who are the beneficiaries of these concessions and to what extent do they benefit? The answers to these questions can help to draw conclusions about the original focus of this paper, i.e. the extent to which the results of the political decision making process follow the preferences of voters and interest groups. The more concessions a political party has to make, the less political influence does it have. The influence of interest groups of voters increases with the extent of concessions they can wring from the political parties. Based on the theoretical considerations in the preceding sections, section 6 shows how the political influence of voters and interest groups is changed when the characteristics of the political landscape change.

2. Politicians and political parties

In most democracies, especially in Europe, the political competition is primarily carried out by political parties rather than by individual politicians. In this paper, it is assumed that only two parties compete for power. Each party will be interpreted as a sort of enterprise that tries to maximize the utility of its members, especially the candidates (e.g. Galeotti and Bretton, 1986, Jones and Hudson, 1998). As the utility of an individual candidate depends largely on his income, prestige and power, the primary party aim is to achieve political posts for as many of its candidates as possible. The number of available posts is especially high if the party wins the election and is allowed to fill positions in the government and top bureaucracy. Hence it can be assumed that the primary aim of a political party is to win the election by attracting the majority of votes.

A secondary political aim of every party concerns the political decisions its members want to put through once they are in power. These decisions are proclaimed in the party programme. In this paper, each party P is assumed to have an ideal party programme PRG^{P*} . It represents the aggregated political preferences of the party members and candidates. Empirical observations especially from Europe suggest that existing political parties differ in ideology and consequently in their party programme (e.g. Klingemann and Volkens, 1997: 532-533). This difference is stabilized by the fact that an individual who wants to become a politician will choose the party whose political ideology comes closest to his own beliefs. First, this makes it more likely for him to get nominated. Second, once in power, he and his fellow party members can use the political power to change the institutional settings within the society according to their own ideological preferences. As empirical studies show, this possibility represents a strong motivation for politicians (Kalt and Zupan, 1984: 281-282, Kalt and Zupan, 1990: 104, Bronars and Lott, 1997: 320-346). Therefore the more of PRG^{P*} the winning party can put through after the election, the higher the utility of the party members and candidates.

In the competition for this majority, it is in most cases necessary for a political party to offer a programme PGR^P that deviates from PGR^{P*} (Coughlin et. al., 1990: 685-686). The difference is due to concessions that the party makes in favor of different groups of voters and interest groups in exchange for additional votes (Denzau and Munger, 1986: 92-93, Grossman and Helpman, 1996: 278-279). The fact that a party can only put through its own positions if it is in power constitutes a clear hierarchy of aims. The primary objective is to win the election. As the deviations from PRG^{P*} lead to losses in utility among the party candidates, every party will try to reach political power with as few deviations as possible. A rational party can thus be expected to use the instrument of programmatic concessions effi-

ciently. This paper differentiates between structural efficiency and level-efficiency. A campaign is structurally efficient if a given volume of concessions is distributed among possible groups of addressees in such a way that it attracts the highest possible number of additional votes. The deduction of structural efficiency makes it necessary to interpret the concessions as a cardinal measure. In this paper, they will be measured by the additional rents that the beneficiaries are granted. Level-efficiency is given when a party chooses the smallest possible level of deviations that is sufficient to reach political power. Therefore the questions posed in section 1 can be expressed as follows: First, What is the level-efficient amount of concessions? Second, how are structurally efficient concessions distributed across voters and interest groups? The following three sections will derive a general answer to these questions. Section 6 shows how these answers change when changes in the political landscape occur.

3. Voters

3.1 Characteristics

3.1.1 Motivation and information of a single voter

Much has been written about the role of voters in the political contest. In the following section, this group of political agents will be shortly characterized. The voter is assumed to be a rational individual who tries to maximize his utility in general as when voting (Fain and Dworkin, 1993: 284, Fiorina, 1996: 403, Jones and Hudson, 1998: 178, Blais and Young, 1999: 40). Following the theory of expressive voting, it will be assumed that the vast majority of voters draws a positive utility from the act of voting, even though they know that their vote will not tip the scales (e.g. Weck-Hannemann, 1996: 35-36, Brennan and Hamlin, 1998: 155-160, Blais and Young, 1999: 43-44). This assumption is much more consistent with the empirical observations than the often stated conviction that rational voters will abstain from voting (Wittman, 1995: 9-12, Fiorina, 1996: 403).

In addition, this paper does not follow the popular belief of the rationally uninformed voter. Due to the minute effect the individual vote has on the outcome of an election, a rational voter will not spend any resources solely to collect politically relevant information. Much of this information is, however, collected on the side while engaging in other activities (Wittman, 1995: 9-12, Fiorina, 1996: 402-403). Politically relevant information from radio and TV, for instance, is usually obtained while consuming these media for reasons of entertainment or leisure (Wittman, 1995: 9-12, Fiorina, 1996: 403, Rudzio, 1996: 208-209). In addition, some of the information that an individual needs for his work may prove to be politically relevant.¹ Furthermore, there are a number of policy issues, where detailed knowledge of the

latter is privately valuable (e.g. knowledge about the tax legislation, public subsidization programmes or social welfare; see Congleton, 1991: 42-43, Wittman, 1995:11-12).

In sum, the voters can and will collect politically relevant information at zero costs in their every day life or for individual private profit. It can be assumed that this information is sufficient to give every voter an idea of the basic ideological positions of the parties he can vote for (e.g. Brennan and Hamlin, 1998: 156).² In addition to that, many voters will be roughly informed about the parties' positions on the major political issues. Depending on the individual situation and preferences, different voters are informed about different political fields and to different extents.

Based on the individual information, every voter makes his voting decision. The question whether he will vote for party A or B depends first on their political programmes. Other things equal, a voter will vote for the party whose political programme, if put into action, provides him with a higher utility (Coughlin et al., 1990: 684-686). Second, his decision is guided by an individual ideological bias. This bias expresses his basic predisposition to vote for a certain party. In the following passages, a positive bias b_j of voter j stands for a predisposition to vote for party A (Coughlin et al., 1990: 685-686). Aggregating these two components leads to the evaluation function of individual j .

$$(3.1) \quad E[U_j(\text{PRG}^A)] - E[U_j(\text{PRG}^B)] + b_j$$

The voting decision of voter j is thus determined by the sum of the utility differential from the political programme and his ideological bias. The latter has to be interpreted as a utility bias.

3.1.2 Structure of voters

The following section differentiates between informed and uninformed voters. Uninformed voters do not have sufficient politically relevant information to estimate the differences in utility that they have to expect from a political success of party A or B. Hence they make their voting decision only on basis of their individual bias. If it is positive, an uninformed voter votes for party A, else for party B (Grossman and Helpman, 1996: 286-269).

All uninformed voters can be aggregated to one group of n_u individuals. Within this group, the ideological bias will differ. Assuming an equal distribution of the bias between a left margin l_u and a right margin r_u , the number of uninformed voters that vote for party A is given by the following expression:

$$(3.2) \quad V_u^A = a_u n_u r_u \quad \text{where:} \quad a_u = \frac{1}{r_u - l_u}, \quad l_u \leq 0, r_u \geq 0, r_u > l_u$$

The second group of voters, the informed voters, need to be disaggregated further. Even though they can be assumed to have the same primary arguments in their utility functions – i.e. income, prestige etc. – they may deviate in their judgement about the political programmes. This is due to the fact that the different parts of the programme are of different importance for their utility, depending on their individual preferences and current situation.

For some of these informed voters, their utility depends primarily on one certain point of the political agenda (e.g. Congleton, 1991: 39-42). Such a dominant issue could be the agricultural policy for farmers or the environmental policy for those voters who draw a high utility from a functioning natural environment. All informed voters who base their voting decision predominantly on the same dominant issue are aggregated to become a group of so-called dominant-issue-voters³.

A large number of groups of dominant-issue-voters can be expected to exist within a society. Apart from these dominant-issue-voters, there are numerous informed voters who do not base their decision primarily on one political issue. Even though there may be gradual differences in their evaluation function, these voters will hereafter be regarded as one group.

For this group of voters as well as for every group of dominant-issue-voters, the ideological bias is assumed to be equally distributed within the interval $[l_i, r_i]$. The number of voters within such a group i who vote for party A is given by the following expressions (Denzau and Munger, 1986: 93):

$$(3.3) \quad V_i^A = n_i a_i [r_i + U_i(\text{PRG}^A) - U_i(\text{PRG}^B)], \quad \text{where} \quad l_i \geq 0, r_i \geq 0, r_i > l_i$$

where n_i = number of voters in group i

$$a_i = \frac{1}{r_i - l_i}, \quad l_i \leq 0, r_i \geq 0, r_i > l_i$$

3.2 Consequences for the party's political campaigns

A glance at (3.3) reveals two basic starting points to which a political party can apply its instruments in order to win more votes. It can either make programmatic concessions or spent resources on campaigning. The effects of both instruments will be discussed in detail

below. For illustrative reasons, the following passages are based on the assumption that party A takes measures to attract additional votes while party B remains passive.

3.2.1 Programmatic concessions

Party A can change the party programme and thereby make concessions to different groups of voters. Some of the beneficiaries who intended to vote for party B will recalculate their utility from voting and change to party A. The concession of party A in favor of a certain group of beneficiaries will be denoted P_i^A . The gain in utility that a single beneficiary receives from a given P_i^A is a negative function of the number of beneficiaries, who share the additional rent.

$$(3.4) \quad \frac{dU}{dP_i^A} = f(P_i^A/n_i^{ben})$$

Assuming a constant ratio of n_i to n_i^{ben} , (3.4) can be rewritten as follows:

$$(3.5) \quad \frac{dU}{dP_i^A} = f(P_i^A/n_i)$$

The marginal number of votes that a change in P_i^A can attract in a certain group of voters is given by the following expression:

$$(3.6) \quad \frac{dV^A}{dP_i^A} = \frac{dV^A}{dU} \cdot \frac{dU}{dP_i^A} = a_i n_i f(P_i^A/n_i)$$

As (3.6) illustrates, the increase in per capita utility that a given P_i^A can bring depends on the utility function of the voter. Due to the specific structure of their utility function, especially dominant-issue-voters will draw a high additional utility from changes in those part of the political programmes that affect their dominant issue. Hence concessions to these groups of voters can be expected to increase the number of votes of party A substantially.

In principal, the other informed voters also respond to changes in programme. However, the heterogeneity of this group makes it difficult for a party to gain considerable votes in this group of voters by changing the political programme. This is due to the fact that the beneficiaries in this group draw much lower additional utility from a given concession than the dominant-issue-voters do. Moreover, other informed voters in this group will at the same time draw a negative utility from the same concession. In this paper, it will be assumed the number of votes a party can attract by making concessions to informed but non-dominant-issue-voters is negligible.

Though some uninformed voters may be beneficiaries of a certain concession, the latter does not alter their voting decision. Therefore a party cannot attract extra votes by making concessions to uninformed voters. In sum, a rational political party will restrict its concessions to those points of the party programme, which represent a dominant issue for some group of dominant-issue-voters.⁴

A structurally efficient distribution of concessions demands that the given amount of concessions is distributed across all groups of voters so that the marginal gain in votes is the same in all groups. Following the standard theory of utility in assuming diminishing utility gains from additional concessions, every group of dominant-issue-voters will benefit to some extent. Consequently, the higher the value of a_i , that is the less widely the ideological bias is dispersed, the more concessions a group of dominant-issue-voters will get. Apart from that, there are no generally valid conclusions about the structurally efficient distribution of concessions across different groups of dominant-issue-voters. In particular, it is impossible to determine whether small or large groups will receive more concessions. The answer to this question depends on the form of the utility function. Frequently, utility functions of the following type can be found in the literature;

$$(3.7) \quad U(P_i^A) = k_i (P_i^A / n_i)^{1/\tau}, \text{ where, } k_i, \tau = \text{constant}; \tau > 1$$

In this case, the marginal gain in votes that party A can get from a change in the concession in favor of group i is given by the following expression:

$$(3.8) \quad \frac{dV_i^A}{dP_i^A} = a_i (n_i)^{1-1/\tau} k_i \left(\frac{1}{\tau} \right) \left(\frac{1}{P_i^A} \right)^{1/\tau-1}$$

Hence the number of votes that can be won with a certain amount of concessions is higher, the higher the number of dominant-issue-voters that benefit from it. Other things being equal, a group of dominant-issue-voters will get more concessions, the more individuals it counts (Bischoff, 2001: 159-162).

So far, this section has dealt with the – from the party's point of view – positive aspects of concessions. Usually, a certain concession does not only have beneficiaries but at the same time places a burden on other members of society, who have to pay for the concession for instance via higher taxes or consumer prices. If the burden reduces the utility of informed voters, some of them will change their voting decision. They will abstain from voting for party A and vote for party B. In this paper it will be assumed that the sum of votes lost among informed voters only depends on the sum of concessions and not on their distribution

across different groups of beneficiaries. Consequently these losses in votes can be expressed as follows:

$$(3.9) \quad \frac{dV^A}{d \sum_{i=1}^{m_{div}} P_i^A} = a_{inf} n_{inf} \frac{dU}{d \sum_{i=1}^{m_{div}} P_i^A}$$

where n_{inf} = number of informed voters,
 m_{div} = number of groups of dominant-issue-voters.

This formula shows that the losses in votes are higher, the higher the number of informed voters is. Note that n_{inf} includes all informed voters, regardless of whether these are dominant-issue-voters or not. At the same time, the losses are higher the smaller the dispersion in ideological bias within the informed voters.

3.2.2 Campaigning

Apart from changes in programme, a party can expect additional votes from a better image and appearance in the public (e.g. Lott, 1991: 87-88). This can be achieved through political campaigning (e.g. Mueller and Stratmann, 1994: 55-61).⁵ In the model developed here, campaigning will lead to changes in the ideological bias of the addressees. The bias will increase with campaigning efforts of party A and decrease if party B engages in campaigning (Denzau and Munger, 1986: 92, Coughlin et al., 1990: 689, Mueller and Stratmann, 1994: 55-61). All voters – regardless of whether they are informed or uninformed – can be addressed by party campaigns.

Hereafter, C_v^A denotes the campaigning effort that party A makes to influence the group of voters v . Assuming that the dispersion of the ideological bias within this group remains constant, the campaigning of party A will result in an increase in r_v . The marginal additional votes produced by C_v^A is thus given by the following expression:

$$(3.10) \quad \frac{dV^A}{dC_v^A} = a_v n_v \frac{dr_v}{dC_v^A}$$

As there is no rivalry in consuming the political campaigns, political campaigns are – other things being equal – more productive the more voters they reach. Therefore a structurally efficient campaign will try to reach as many voters as possible.

4. Interest groups

4.1 Characteristics

Interest groups are the third type of agents in the process of political decision making next to voters and political parties. They are founded by individuals who have a common interest. The aim of an interest group is to promote the interest of the underlying group of individuals (Olson, 1965: 5-9). Depending on their common interest, different points of the political agenda are relevant for different interest groups. By comparing these points in the two party programmes, an interest group can identify the party, whose political programme supplies their members with a higher utility. While some interest groups favor party A, others find the political programme of party B more attractive. A rational interest group will support the preferred party in its election campaigns (e.g. Austen-Smith, 1987: 123-125, Mueller and Stratmann, 1994: 55-56, Daxhammer, 1995: 115). This support can take the form of campaign contributions. In addition to that, interest groups can address the voters directly in their own campaigns (e.g. Jacobsen, 1985: 7-8, Potters and Sloof, 1996). Just like the parties' campaigns, they try to convince the voters to vote for the favored party (e.g. Schneider and Naumann, 1982: 284-286, Bernholz and Breyer, 1994: 172-181). The total amount of support an interest group q is willing to spend on supporting the preferred party is denoted S_q . It depends on the difference in utility, that the two party programmes offer their members. The higher the difference $E[U(\text{PRG}^A)] - E[U(\text{PRG}^B)]$, the more support the favored party will get.

4.2 Consequences for the political competition between parties

A political party can make use of this relationship in two ways. First, it can make concessions to interest groups that already prefer its programme. These concessions will lead to an increase in the support granted by the interest groups and hence in additional votes (e.g. Denzau and Munger, 1986: 92). Second, concessions can address interest groups that favor the other party. In this case, the additional votes will result from a decrease in support that the addressed interest groups grant the political opponent. The votes that party A can win from programmatic concessions to interest groups depend on the sum of campaign support party A can attract from the Q interest groups:

$$(4.1) \quad \ddot{A}V_{\text{sup}}^A = f\left(\sum_{q=1}^Q S_q^A\right)$$

A structurally efficient distribution of concessions on different interest groups demands that the more votes a certain interest group can produce by campaigning, the more concessions

will be made in favor of this group. This rule has to be followed regardless of which party the particular interest group favors.

Concessions to interest group which support a group of dominant-issue-voters produces a double dividend. If the interest groups favors party A, they will intensify their support in return for concessions from this party. Alternatively, the interest groups in favor of party B reduce their efforts to support this party as a reaction to these concessions. In both cases, party A will gain votes. These add to those votes which the concessions attract within the group of dominant-issue-voters (see section 3.2.1). The double dividend has two consequences for the structural efficiency of the concession allocation. First, a group of dominant-issue-voters will – other things equal – get higher concessions if it is supported by an interest group. Second, the more dominant-issue-voters an interest group represents, the more concessions it will get – again other things equal.

This raises the question whether interest groups that do not promote the interest of any dominant-issue-voters will receive any concessions at all. Keeping up the assumption of equal vote productivity of the campaign support of all interest groups, these interest groups should not get any concessions. Following this logic especially trade associations, whose members are mostly firms which do not have the right to vote, should not be addressees of the programmatic concessions. This hypothesis is heavily contradicted by real-life observations, where trade associations receive substantial concessions. The empirical evidence suggests that these interest groups can compensate for the missing dominant-issue-voters. Hence, for some reason, campaign support of interest groups without dominant-issue-voters attract more votes than the support of those interest groups with such voters. This can be explained as follows: Interest groups that promote dominant-issue-voters must use part of their campaign support to inform these voters about the concessions. The other interest groups can concentrate 100 % of their support on influencing large groups of voters. Therefore a given concession results in a larger amount of resources being spent on campaigning and hence produces more votes.

5. Equilibria of the parties' competition

5.1 Structural efficiency

As illustrated in chapter 2, both parties try to win the election with the lowest possible level of concessions. Hence it can be assumed that both parties follow the conditions of structural efficiency. In sum, a structurally efficient distribution of concessions has to meet the following requirements. Among the groups of dominant-issue-voters, the concessions must be distributed such that the marginal vote productivity is the same in all groups. Groups

with a larger a_i and those groups whose interests are promoted by interest groups will get more concessions. Assuming a utility function as proposed in (3.7), the larger a group of dominant-issue-voters is, the more concessions it will receive. A certain part of the concessions will be given to interest groups in exchange for campaign support. As there is no rivalry in consuming this campaign support, it can be assumed that the support will be used to address all voters simultaneously. Again diminishing marginal votes will be assumed. In this case, a structurally efficient distribution of concessions is given when the marginal productivity of concessions made to interest groups equals that in every single group of dominant-issue-voters.

Apart from gains, concessions – regardless of whether they address interest groups or dominant-issue-voters – also produce losses in votes (see 3.9). As these losses only depend on the sum of concessions but not on the addressees, their existence does not affect the conditions for a structurally efficient distribution of concessions. If increasing losses in votes with growing concessions are assumed, they do, however, restrict the total number of votes that can be won by programme variations. This will be important in the next section where the question of level-efficiency of concessions is addressed.

5.2 Level-efficiency

Level-efficiency demands that the election is won with the lowest possible sum of concessions. Before the parties make concessions or spent resources on campaigning, party A can expect a certain number of votes. These come from those voters whose evaluation function delivers a positive value when substituting PRG^{A*} and PRG^{B*} (see (3.1)). As every concession causes losses in utility, a rational party will try to win as many votes as possible without having to deviate from PRG^{P*} . First of all, party A will use its own funds for campaigning. Second, the support it gets from those interest groups that favor PRG^{A*} in comparison to PRG^{B*} brings additional votes. Subtracting those votes that party B is able to attract through own funds and interest groups' support leads to an initial distribution of votes among both parties. For the following analysis, this situation serves as a theoretical starting point of the political contest.

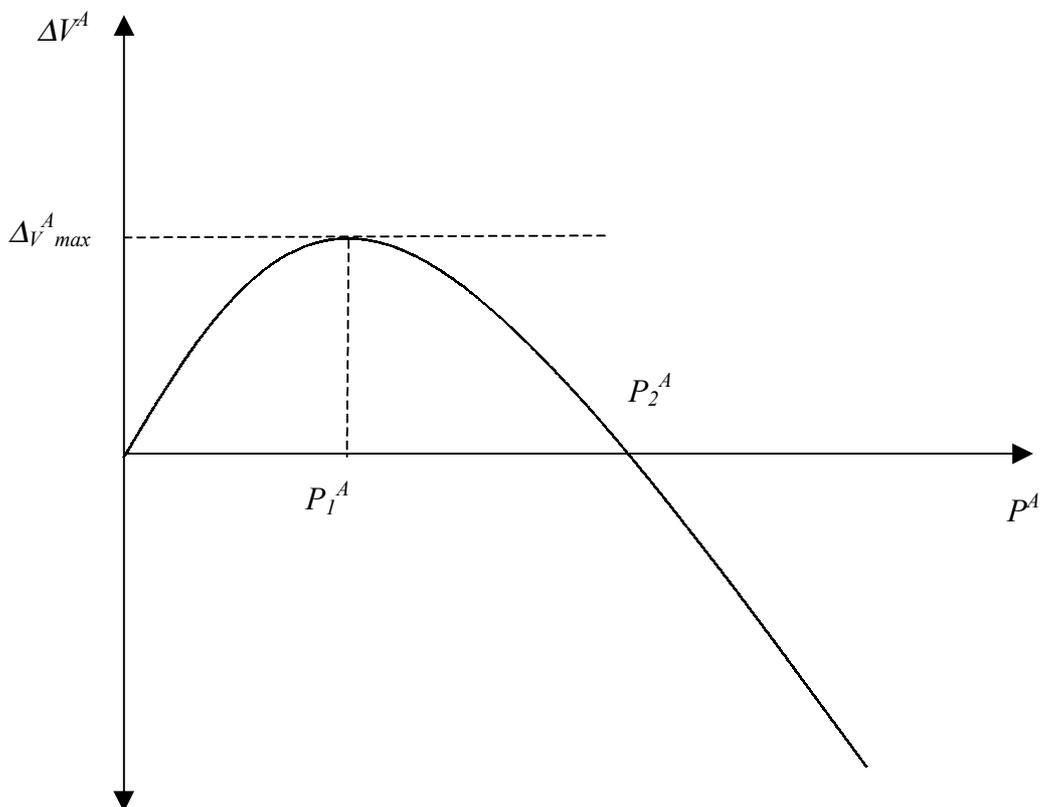
Beyond this point, additional votes can only be attracted by granting concessions. The question addressed in this section is what level of concessions can both parties be expected to make in their competition for the majority of votes. The answer will be given in three steps. First, the number of votes a single party can win by isolated concessions is illustrated. In the next step, the effects of simultaneous political activities of both parties on the distribution of votes is demonstrated. Finally, possible political equilibria are derived and

analysed. In the following passage it is assumed that the concessions of party A are used in a structurally efficient way and that party B still does not make any concessions. Then the number of additional votes party A can get is only a function of the sum of concessions P^A it is willing to make to the M addressees (dominant-issue-voters and interest groups).

$$(5.1) \quad \Delta V^A = f(P^A), \text{ where } P^A = \sum_{m=1}^M P_m^A$$

Figure 1 visualizes the relationship between P^A the gains in votes ΔV^A . Initially, an increase in P^A attracts more votes. Due to the growing losses and the diminishing gains that concessions produce in the different target groups, the marginal number of votes decreases with growing P^A . The net gains reach a maximum of ΔV^A_{\max} at P_1^A . For any additional concessions beyond P_1^A , the losses are larger than the gains. A further increase in P^A will thus reduce ΔV^A . For values of $P^A > P_2^A$, party A ends up with less votes than it had at the starting point of the contest, when it offered PRG^{A*} . Therefore if party A is sure that the opponent will not deviate from PRG^{B*} , it will at most make concessions in the volume of P_1^A . If the aim - i.e. winning the election - can be achieved with less concessions, the party will choose a lower value of P^A .

Figure 1.



Now it is not realistic to assume that party B will not deviate from PRG^{B*} . Instead, it will itself try to attract more votes by making concessions and thereby reduce the number of votes party A can attract with a given volume of P^A . As discussed in sections 3.1 and 4.1, informed voters and interest groups base their voting decision respectively the decision about the amount of support on the difference in utility resulting from differences in the party programmes. Hence the decision to vote for the other party or change the level of support depends on the difference in the changes of the party programmes – in short the difference in concessions. If both parties make structurally efficient concessions, the net gains or losses in votes depend on two factors. First, they depend on the difference of P^A and P^B . Second, they are a function of the vote-productivity that the concessions of the parties have.

Assuming the latter to be equal⁶, the additional votes that party A will win and party B will lose is given by the following expression:

$$(5.2) \quad \Delta V^A = -\Delta V^B = f(P^A - P^B)$$

The question now is, what level of concessions can party A be expected to choose. The answer depends on the number of votes party A has to attract in order to win the election. This in turn depends on the initial distribution of votes. The latter is not determined in the model but considered to be exogenous. Three different starting points of the parties' competition will be analysed here.

1) extremely uneven initial distribution of votes

If the difference in the initial number of votes between both parties is larger than ΔV_{\max}^A , the leading party will surely win the election when offering its ideal programme. As any deviations from the latter means losses in utility for the party members, a rational party will in this situation not make any concessions. It will thus win the election and put through its PRG^{P*} . Neither interest groups nor voters can force this party to change its political programme.

2) uneven initial distribution of votes

If the initial distribution of votes is less uneven, the party with the better position is still more likely to win the election. It can defend the lead if it anticipates the concessions of the political opponent correctly and reacts in the suitable way. General predictions about the outcome of the election are impossible. Both parties are, however, forced to change their programme in favor of interest groups and dominant-issue-voters.

3) very close initial distribution of votes

Quite often, the initial distribution of votes is very close. In these cases every party must at least try to minimize the possible losses during the election run. As the political competition is a zero-sum-game, a maxminimizer strategy can be considered rational (e.g. Osborne and Rubinstein, 1994:21-24).

In order to find out what level of P^A fulfils this requirement, it is necessary to put up a pay-off matrix. Due to missing real-life data, the following passages will illustrate the political competition using a numerical example. Therefore let

$$(5.2) \quad \Delta V^A = \text{sign}(P^A - P^B) \cdot (16 - (4 - (|P^A - P^B|))^2).$$

The relationship between P^A and ΔV^A (with $P^B = 0$) resembles that illustrated in figure 1 with $P^{A_1} = 4$, $P^{A_2} = 8$, and $\Delta V^A_{\max} = 16$. The corresponding pay-off matrix is given by table 1. Therein the maximum losses party A (B) can suffer when choosing a certain level of P^A (P^B) are denoted in the last column (row). The maxminimizer strategy demands that both parties do not make concessions that exceed 9. This guarantees that both parties will at most lose 16 votes. Any higher level of concessions can lead to larger losses. If both parties follow this rationale, they will restrict their concessions to the area where $P^A < 10$; $P^B < 10$. If this restriction is common knowledge, concessions of 8 will reduce the maximum losses to 7 votes and thus represent the maxminimizing solution. The situation in which $P^A = P^B = 8$ does, however, not represent a Nash-equilibrium, because every party can win additional votes by increasing the level of concessions to $P^P = 9$. On the other hand, by doing so, each party exposes itself to the danger of losing 16 votes if the competitor reduces its concessions to $P^P = 5$. Assuming that both parties have the possibility to react quickly to concessions made by the opponent and make credible threats, it is likely that the situation in which $P^A = P^B = 8$ is chosen by both parties.

This result has some noteworthy properties. First of all, the initial distribution of votes will remain unchanged. As both parties make identical concessions, not a single voter will change his mind during the election race. In addition, the interest group will not support the parties any more than they already did due to the differences in the ideal programmes PRG^{P^*} . At the same time, however, the dominant-issue-voters and interest groups benefit from the political competition because they receive additional rents regardless of which party finally wins the election. Simultaneously, all other voters suffer losses compared to the starting point of the political competition. It can be expected that the sum of concessions is higher

than in case 2). From the parties' point of view, the political competition is a prisoners' dilemma, because they do not win any votes but make concessions which reduce their utility.

6. Political influence of interest groups and voters and characteristics of the political landscape

The amount of concessions a certain interest group or group of dominant-issue-voters gets can be interpreted as a measure for its influence on the political decision making process. Hence this influence rises the closer the initial distribution of votes is. In this section, the model developed above will be used to derive a number of further factors which determine to what extent interest groups and different groups of dominant-issue-voters can force the political parties to change their programmes according to their preferences. The answer is, of course, not an exact monetary equivalent, but expressed in categories of the model. Many of these categories are, however, closely related to central characteristics of the political landscape. The percentage of informed voters and the degree of ideological polarization of the population (expressed in a_i) are two important examples for this. Thus it is possible to apply the model to show how changes in the political landscape affect the influence that different groups of voters and interest groups have on the process of political decision making. The following passages will outline the effects of assorted changes.

1) changes in the distribution of the ideological bias

One possible question could be how changes in the distribution of the ideological bias affect the political equilibrium. Here it is necessary to differentiate between changes in the dispersion represented by $1/a_i$ and the location, i.e. $a_i \cdot r_i$. Changes in the location solely shift the initial distribution of votes. The effects on the outcome of the political competition thus depends on how close the political race was before and how close it is after the change. Any change that makes the race closer can be expected to lead to an increase in concessions.

If only the dispersion of the ideological bias is altered, the initial distribution of votes remains unchanged. The effect on the outcome of the parties' competition depends on whether the changes affect all groups of voters equally. If so, the conditions for a structurally efficient distribution of concessions remains unaltered. Solely the number of votes that the concessions attract will decrease or increase, depending on whether a_i decreases or increases; hence ΔV_{max}^A is changed, while P_2^A and P_2^A remain unchanged (see figure 1). Whether the total sum of concessions is adjusted as a reaction to this change, depends on the initial distribution of votes. If it is very close, both parties will still make concessions corresponding to P_2^A in figure 1. If, however, one party was clearly in the lead, an increase in a_i

and thus ΔV_{\max}^A can give the other party the chance threaten the position of the leading party. Thus it may be forced to make concessions.

In those cases where the different groups of voters are affected differently, the structurally efficient distribution of concessions will change. If only dominant-issue-voters are affected by the changes, the concessions will be redistributed to those groups of dominant-issue-voters, where a_i has risen and away from those groups where a_i has decreased. The impact on the total sum of concessions made during the election cannot be predicted in general. An increase in a_i in the group of informed voters raises the marginal losses due to concessions and thus reduces ΔV_{\max}^A , P_1^A and P_2^A . On the other hand, an rise in a_i leads to a higher productivity of campaigning, resulting in an increase of these three parameters. Whether the net effect these changes have for the total level of concessions made in the parties' competition is positive or negative cannot be answered in general. The increase in productivity of campaigning will cause a rational party to give a larger share of concessions to interest groups. This also implies that concessions will be redistributed towards those groups of dominant-issue-voters that are represented by an interest groups and away from the others.

If a_u in the group of uninformed voters increases, the vote-productivity of campaigning increases. Hence the interest groups will get a larger, the dominant-issue-voters a smaller share of the concessions than before. In addition, ΔV_{\max}^A , P_1^A and P_2^A will grow, leading to an increase in the total sum of concessions granted by the political parties in their struggle for power.

2) changes in the composition of the voting population

Apart from changes in the distribution of the ideological bias, changes in the composition of the voting population can be analysed. First of all, changes in the internal structure of the dominant-issue-voters are analysed. Assuming a utility function of the form suggested in (3.7) changes in the size of existing groups dominant-issue-voters will result in a redirection of concessions to growing and away from shrinking groups. If a new group of dominant-issue-voters appears, concessions will be redirected from the already existing addressees (dominant-issue-voters and interest groups) to the new groups in order to satisfy the conditions of structural efficiency. In addition to that, ΔV_{\max}^A , P_1^A and P_2^A will increase. In some cases, not only the structure but also the number of dominant-issue-voters changes. A rise in the latter increases the number of addressees and will thus, other things equal, lead to an increase in ΔV_{\max}^A , P_1^A and P_2^A . An rising number of informed voters will, if they are not

dominant-issue-voters, decrease the vote-productivity of concessions (see 3.9). Hence ΔV_{\max}^A , P_1^A and P_2^A will fall.

Above, two examples illustrated how the model can be applied to analyse the effects of changes in the political landscape on the influence of voters and interest groups on the political decision making process. Due to its flexibility, the model can be used to answer many more questions. For instance, it can help to investigate a very heavily discussed question in public choice theory: Does an increase in the number of interest groups lead to an increase in their political influence, as the theory of institutional sclerosis of Mancur Olson suggests (Olson, 1982, Gray and Lowery, 1988)? In the model developed above, an increasing influence corresponds to a growing sum of concessions in favor of the interest groups. One attempt to address this question with the model above has been made by Bischoff (2001). Assuming a very close initial distribution of votes, he simulated a large number of possible scenarios with different parametric specifications of the model. He reaches the conclusion that an mere increase in the number of interest groups does not increase their influence. The sum of concessions in favor of interest groups only rises in those cases, where the number of dominant-issue-voters supported by interest groups increases simultaneously (Bischoff, 2001: 200-202).

7. Conclusion

The sections above combined existing public choice approaches (especially Denzau and Munger, 1986, Coughlin et al., 1990, Congleton, 1991, Mueller and Stratmann, 1994, Grossman and Helpman, 1996) and added new elements in order to develop a more comprehensive model of the political decision making process. It differentiated between different categories of voters and interest groups and illustrated their properties as target groups for parties' concessions and campaigning efforts. The purpose of the model is to investigate to what extent interest groups and voters can influence the political decision making process. The illustrations show that their influence depends on the characteristics of the political landscape and the closeness of the election race. Furthermore, the model was applied to analyse how changes in structure of the political landscape affect the influence of interest groups and voters. The results of these analyses can be the basis for predictions about the impact of intertemporal changes in the political landscape on the results of the political decision making process. In addition, they can help to explain cross-sectional differences in the political process and its results this process between different polities.

Notes:

¹ This is especially true for civil servants (e.g. Frey and Pommerehne, 1982: 253-254)

² A voter who does not even have enough information to differentiate between the ideological positions of the parties can neither engage in expressive voting, nor can he expect to increase his utility by choosing the “better” party. Such a person has no incentive to vote and thus can be expected to abstain from voting.

³ Congleton (1991) has introduced the concept of single-issue-voting. This behavior is, however, only consistent with rationality, if the readily available data on the other issues is not sufficient to calculate the utility differential due to these issues. This paper adopts the basic idea put forth by Congleton (1991).

⁴ This does not imply that other (informed) voters cannot benefit from these concessions.

⁵ Due to mixed empirical results, there was a controversy in public choice literature on whether campaigning leads to additional votes (e.g. Jacobsen, 1985, Grier, 1989, Lott, 1991, Levitt, 1994, Coates, 1998, Palda and Palda, 1998). Especially for the incumbent this was often doubted, because empirical results showed no significant relationship between his campaigning effort and his final number of votes. This observation can be explained as follows. If the incumbent is comfortably in the lead and his re-election is not in danger, he will not spend too much resources on campaigning. His campaigning effort will, however, be large in those cases where the political race is close. As the probability of losing the election is higher in these cases, empirical tests may produce negative coefficients. In this paper, it will be assumed that a party can attract additional votes through campaigning.

⁶ Empirical evidence shows that in the race of two individual candidates the incumbent has a lower productivity of campaigning. This is due to the fact that he is already well-known to the voters, while very often his opponent is not. As being known is an essential precondition for political success (e.g. Lott, 1991: 87-88), the opponent can expect a high productivity of campaigning. In the model developed here, the competition does not take place between individual candidates, but between political parties. These parties as well as their basic ideological position and top candidates are usually well-known to the public. Therefore the assumption of equal productivity of campaigning is much less problematic in the context of this model.

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Table 1 Pay-off matrix of party A, votes won by party A at various combinations of P^A and P^B

P ^A P ^B	0	1	2	3	4	5	6	7	8	9	10	11	12	13
0	0	7	12	15	16	15	12	7	0	<u>-9</u>	-20	-33	-48	-61
1	-7	0	7	12	15	16	15	12	7	0	-9	-20	-33	-48
2	-12	-7	0	7	12	15	16	15	12	7	0	-9	-20	-33
3	-15	-12	-7	0	7	12	15	16	15	12	7	0	-9	-20
4	<u>-16</u>	-15	-12	-7	0	7	12	15	16	15	12	7	0	-9
5	-15	<u>-16</u>	-15	-12	-7	0	7	12	15	16	15	12	7	0
6	-12	-15	<u>-16</u>	-15	-12	-7	0	7	12	15	16	15	12	7
7	-7	-12	-15	<u>-16</u>	-15	-12	-7	0	7	12	15	16	15	7
8	0	-7	-12	-15	<u>-16</u>	-15	-12	-7	0	7	12	15	16	10
9	9	0	-7	-12	-15	<u>-16</u>	<u>-15</u>	<u>-12</u>	<u>-7</u>	0	7	12	15	10
10	20	9	0	-7	-12	-15	-16	-15	-12	-7	0	7	12	10
11	33	20	9	0	-7	-12	-15	-16	-15	-12	-7	0	7	10
12	48	33	20	9	0	-7	-12	-15	-16	-15	-12	-7	0	10
13	65	48	33	20	9	0	-7	-12	-15	-16	-15	-12	-7	10
14	84	65	48	33	20	9	0	-7	-12	-15	-16	-15	-12	10
15	110	84	65	48	33	20	9	0	-7	-12	-15	-16	-15	10
16	130	110	84	65	48	33	20	9	0	-7	-12	-15	-16	10
17	150	130	110	84	65	48	33	20	9	0	-7	-12	-15	10
MIN	-16	-16	-16	-16	-16	-16	-16	-16	-16	-16	-20	-33	-48	-61

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